ORIGINAL

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APS

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January 31, 2005

Ernest Johnson
Director, Utilities Division
ARIZONA CORPORATION COMMISSION
1200 West Washington Street
Phoenix, AZ 85007

E-00000D-05-0040

Re: 10-Year Plan

Dear Mr. Johnson:

In compliance with A.R.S. § 40-360.02 and pursuant to Arizona Corporation Commission ("Commission") Decision Nos. 63876 (July 25, 2001), and 65154 (September 10, 2002), enclosed please find Arizona Public Service Company's ("APS" or "Company") 2005-2014 Ten-Year Plan for major transmission facilities, along with associated system studies and system ratings.

The 2005-2014 Ten-Year Plan describes planned transmission lines of 115 kV or higher that APS may construct over the next 10 years. This Ten-Year Plan includes approximately 343 miles of new 500 kV transmission lines, 72 miles of new 230 kV transmission lines, and 17 new bulk transformers. The APS investment needed to construct these projects is currently estimated to exceed $1.15 billion. When completed, these projects are expected to add approximately 2000 MW of additional Extra-High Voltage scheduling capability, as well as 3400 MW of import capability into the Metropolitan Phoenix Area and 247 MW of import capability into Yuma.

These new transmission projects, coupled with additional distribution and sub-transmission investments, will support reliable power delivery in both APS' service area and in the western United States. However, the Ten-Year Plan, as well as other APS reliability-related infrastructure investments, is premised on a number of assumptions concerning the Company's future financial condition, the regulatory treatment of such investments by the Commission and the Federal Energy Regulatory Commission ("FERC"), other state and federal policies affecting transmission, and, of course, APS' ability to finance large investments of this nature on commercially-reasonable terms.

Please contact me if you have any questions or desire additional information concerning this filing.

Arizona Corporation Commission
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Yours truly,

Bob Smith

RDS: AKK
Enclosures
Cc/encl: Docket Control (Original, plus 13 copies)
Laurie Woodall, Assistant Attorney General

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

ARIZONA PUBLIC SERVICE COMPANY
2005–2014
TEN-YEAR PLAN

Prepared for the

Arizona Corporation Commission

January 2005

TEN YEAR PLAN 2005 - 2014

ARIZONA PUBLIC SERVICE COMPANY
2005–2014
TEN-YEAR PLAN

Prepared for the

Arizona Corporation Commission

January 2005

ARIZONA PUBLIC SERVICE COMPANY
2005 - 2014
TEN-YEAR PLAN

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ARIZONA PUBLIC SERVICE COMPANY
2005–2014
TEN-YEAR PLAN

GENERAL INFORMATION

Pursuant to A.R.S. § 40-360.02, Arizona Public Service Company ("APS") submits its 2005-2014 Ten-Year Plan. Additionally, pursuant to Arizona Corporation Commission ("Commission") Decision No. 63876 (July 25, 2001) concerning the first Biennial Transmission Assessment, APS is including with this filing its Transmission Planning Process and Guidelines and maps showing system ratings on APS' transmission system. The Transmission Planning Process and Guidelines outline generally APS' internal planning for its high voltage and extra-high voltage transmission system, including a discussion of APS' planning methodology, planning assumptions, and its guidelines for system performance. The system ratings maps show emergency and continuous system ratings on APS' extra-high voltage system, and on its Metro, Northern, and Southern 230-kV systems.

This 2005–2014 Ten-Year Plan describes planned transmission lines of 115-kV or higher voltage that APS may construct over the next ten-year period. Pursuant to A.R.S. § 40-360(10), underground facilities are not included. There are approximately 343 miles of 500-kV transmission lines, 72 miles of 230-kV transmission lines, and 17 bulk transformers contained in the projects in this Ten-Year Plan filing. The total investment for the APS projects and the anticipated APS portion of the participation projects as they are modeled in this filing, is estimated to be in excess of $1.15 billion and the projects will add approximately 2000 MW of additional EHV scheduling capability, 3400 MW of import capability into the Phoenix area, and 247 MW of import capability into the Yuma area. The following table shows a breakdown of the projects contained in this Ten-Year Plan.

	Projects in Ten-Year Plan
500-kV transmission lines	343 miles
230-kV transmission lines	72 miles
Bulk Transformers	17
Total Investment	$1.15 billion
EHV Scheduling Capability	+2000 MW (+28 %)[1]
Total Phoenix Area Import	+3400 MW (+39 %)[1]
Yuma Area Import	+247 MW (+151 %)[1]

[1] Based on 2004 values.

Also, some of the previously reported facilities that have been completed, canceled, or deferred beyond the upcoming ten-year period are not included. The projects at the end of this Ten-Year Plan that have in-service dates of To Be Determined (TBD) are projects that have been identified, but are outside of the ten year planning window. They have been included in this filing for informational purposes. A summary of changes from last year's plan is provided below, along with a list of projects that have been added to the Ten-Year Plan this year.

For the convenience of the reader, APS has included system maps showing the electrical connections and in-service dates for all overhead transmission projects planned by APS for Arizona and the Phoenix Metropolitan Area. Written descriptions of each proposed transmission project are provided on subsequent pages in the currently expected chronological order of each project. The line routings shown on the system maps and the descriptions of each transmission line are intended to be general, showing electrical connections and not specific routings, and are subject to revision. Specific routing is determined by the Arizona Power Plant and Transmission Line Siting Committee when issuing a Certificate of Environmental Compatibility and through subsequent right-of-way acquisition. Pursuant to the amendments to A.R.S. § 40-360.02, this filing also includes technical study results for the projects identified. The technical study results show project needs which are generally based on either security (contingency performance) or adequacy (generator interconnection or increasing transfer capability) or both.

APS participates in numerous regional planning organizations. Through membership and participation in these organizations the needs of multiple entities, and the region as a whole, can be identified and studied. This allows for the potential of maximizing the effectiveness and utilization of new projects. Some regional organizations that APS is a member of include the Western Electricity Coordinating Council (WECC), the Southwest Area Transmission Planning (SWAT), the Southwest Transmission Expansion Plan (STEP), and the Seams Steering Group – Western Interconnection (SSG-WI). Some of the plans included in this filing are the result of these coordinated planning efforts. APS is open to other entities participating in any existing or future planned projects.

APS believes that the projects identified in this 2005-2014 Ten-Year Plan, with their associated in-service dates, will ensure that APS' transmission system meets all applicable reliability criteria. However, changes in regulatory requirements or underlying assumptions such as load forecasts, generation expansion, financial condition, and other utilities' plans, may substantially impact this Ten-Year Plan and could result in changes to anticipated in-service dates or project scopes. Additionally, the future formation and role of the WestConnect Regional Transmission Organization (RTO), or other federal and regional mandates, may impact this Ten-Year Plan and the transmission planning process generally. This Ten-Year Plan is tentative information only and, pursuant to A.R.S. § 40-360.02(F), is subject to change without notice at the discretion of APS, based on land usage, growth pattern changes, regulatory or legal developments, or for other reasons.

Changes From 2004-2013 Ten-Year Plan

The following is a list of projects that were changed or removed from the Ten-Year plan filed last year, along with a brief description of why the change was made.

- Gila Bend-TS8 230-kV line

This project is no longer in the plan as the Gila Bend-TS8 230-kV line. The point of origin has changed to a bus in the Palo Verde vicinity instead of Gila Bend to take advantage of the resources and partnership opportunities in the Palo Verde vicinity. Also, the point of termination has changed from TS8 to the North Gila 500-kV substation or a new substation adjacent to North Gila. In addition to the end points of the project changing the project has changed from a 230-kV line to the option of either a 230-kV or a 500-kV line due to interest that has been expressed in this project from other entities to participate in the project. Having multiple participants in the project would drive the project to being a 500-kV line.

- Hassayampa – Jojoba – Pinal West 500-kV line

The project is in the plan as Hassayampa-Pinal West and no longer has the Jojoba 500-kV switchyard as an intermediate point. While the option of connecting the project into the Jojoba 500-kV switchyard is still available, it is no longer planned as part of the initial project. The in-service date has been moved from 2006 to 2007 and the option for a second circuit has also been added to accurately reflect the CEC that was obtained.

- Northern Area Interconnections

The Flagstaff 345/69-kV interconnection at the WAPA Flagstaff substation has been delayed from 2006 to 2009. With the addition of substation capacitors and transmission line upgrades the need date of the interconnection has been determined to be 2009.

The Second Knoll 500/69-kV loop-in of SRP's Coronado-Silver King 500-kV line has been changed. The project will now loop-in SRP's Coronado-Cholla 500-kV

line. The Coronado-Cholla 500-kV line was determined to provide a better interconnection due to the lack of series capacitors in the line.

- Raceway loop-in of Navajo-Westwing 500-kV line

  The loop-in of the Raceway 500-kV substation into the Navajo-Westwing line has been split into two separate project descriptions. This was done to clarify that it is actually two separate projects. One project is the loop-in of the 500-kV substation and the second project is the 230-kV lines from the 500/230-kV transformers (at the 500-kV substation) to the existing Raceway 230-kV substation.

- Westwing-El Sol 230-kV line

  The in-service date for the Westwing-El Sol 230-kV line has been changed from 2013 to a TBD in-service date. Due to the addition of other projects, the needed in-service date for the Westwing-El Sol 230-kV line is beyond the ten year window of this plan.

- TS3-TS2-TS1 230-kV lines

  The 2004-2013 Ten-Year Plan showed these projects as single circuit 230-kV lines. The 2005-2014 Ten-Year Plan is showing these projects as double circuit 230-kV lines with the in-service date of the second circuit to be determined in future planning studies.

New Projects in the 2005-2014 Ten-Year Plan

The following is a list of projects that are in the 2005-2014 Ten-Year Plan that were not in the 2004-2013 Ten-Year Plan.

- NE3 loop-in of Cholla-Pinnacle Peak 345-kV line

  This project has an in-service date of 2010. It is planned to be a 345/69-kV substation adjacent to the Cholla-Pinnacle Peak 345-kV line corridor, somewhere between Pinnacle Peak substation and 136th street, and is to serve the growing electrical needs in the northeastern part of the Phoenix Metropolitan area.

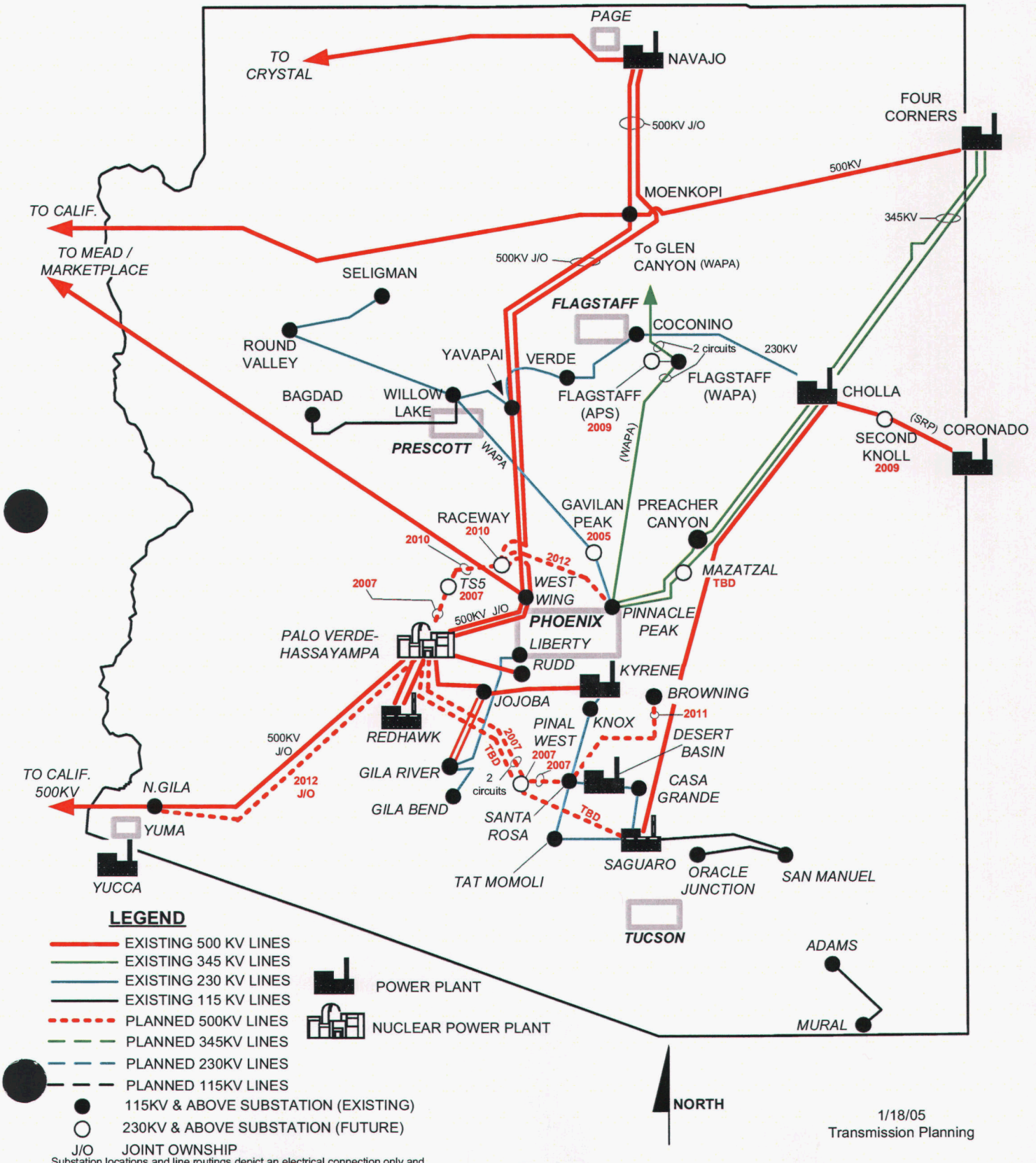
- Jojoba loop-in of TS4-Gila River 230-kV line

  This project has an in-service date of 2011. It is planned to be a 230/69-kV substation in the TS4-Gila River 230-kV line and is to serve the electrical needs of the growing communities in the areas of Buckeye, Goodyear, and Gila Bend.

- Raceway-Pinnacle Peak 500-kV line

  This project has an in-service date of 2012. It is planned to be a 500-kV line between the Raceway 500-kV substation and a new Pinnacle Peak 500-kV substation. This project was identified in the SWAT planning groups and will be a joint participation project with APS as the project manager. The project will increase the import capability to the Phoenix Metropolitan area and strengthen the 230-kV transmission system throughout the Phoenix Metropolitan area.

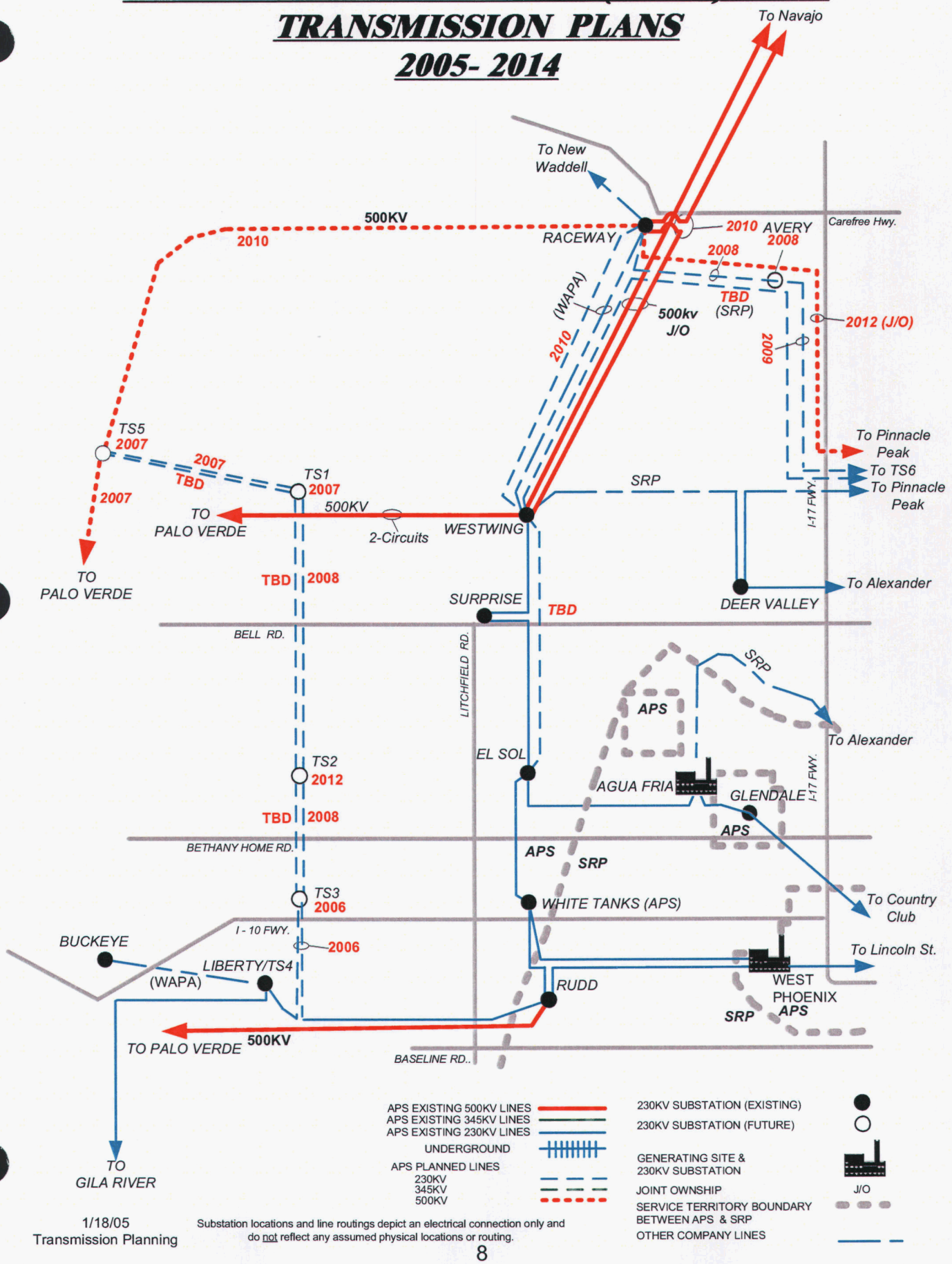
APS EHV & OUTER DIVISION 115/230 KV TRANSMISSION PLANS 2005 - 2014



Substation locations and line routings depict an electrical connection only and do not reflect any assumed physical locations or routing.

1/18/05
Transmission Planning

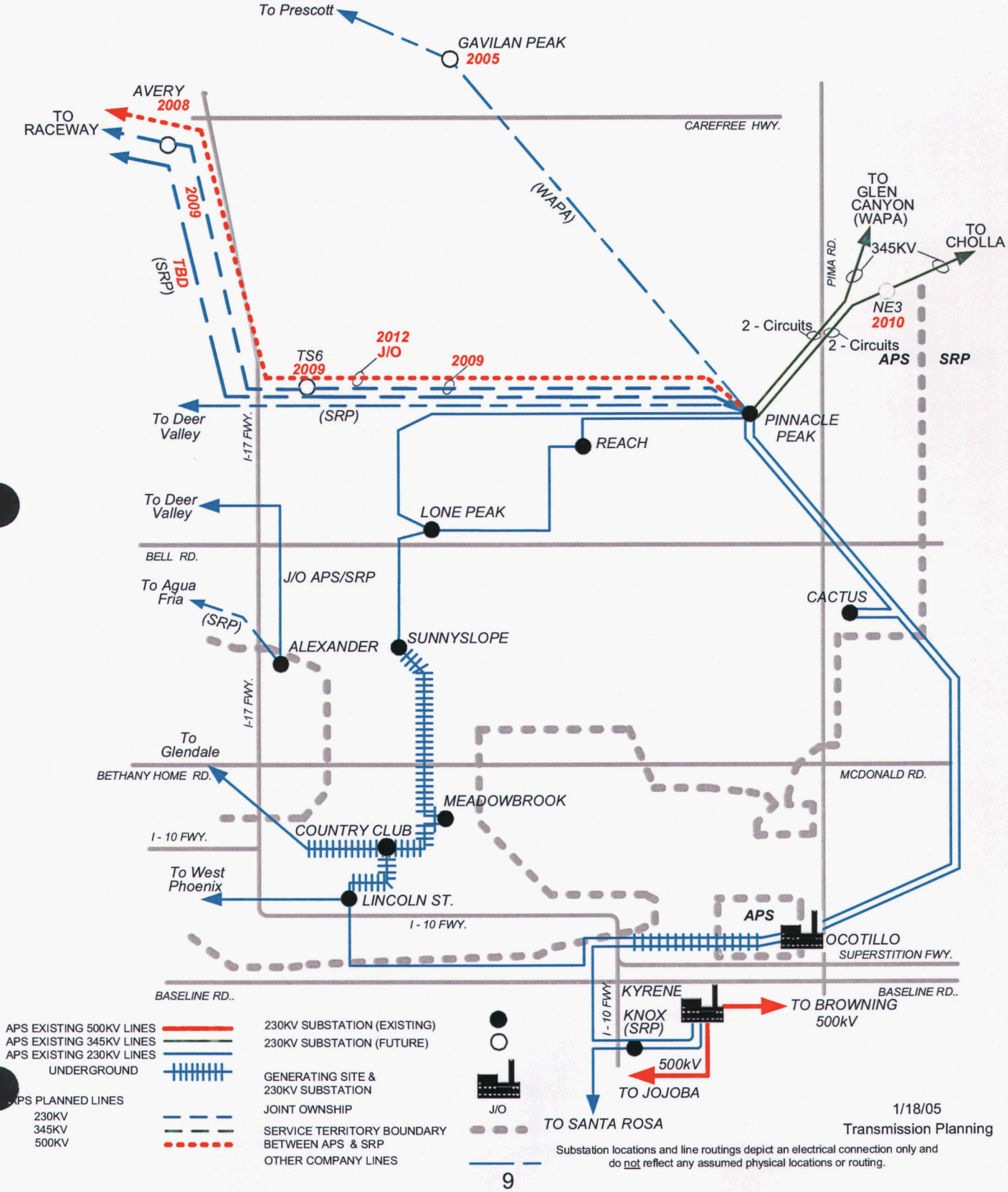
PHOENIX METROPOLITAN (WEST) AREA TRANSMISSION PLANS 2005- 2014



1/18/05
Transmission Planning

Substation locations and line routings depict an electrical connection only and do not reflect any assumed physical locations or routing.

PHOENIX METROPOLITAN (EAST) AREA TRANSMISSION PLANS 2005- 2014



1/18/05
Transmission Planning

Substation locations and line routings depict an electrical connection only and do not reflect any assumed physical locations or routing.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2005

Line Designation	Gavilan Peak loop-in of Pinnacle Peak-Prescott 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	188 MVA
(c) Point of Origin	Pinnacle Peak-Prescott 230-kV line near 12th Street and Desert Hills Drive; Sec. 28, T6N, R3E.
(d) Intermediate Point	None.
(e) Point of Termination	Gavilan Peak 230/69-kV substation to be built in 2005, 1/4 mile south of the intersection of 12th Street and Desert Hills Drive; within the northeast quarter of Sec. 28, T6N, R3E.
(f) Length	Two single-circuit lines, not to exceed two spans, from the existing line corridor to the Gavilan Peak substation.
Routing	Gavilan Peak 230-kV substation will be adjacent to the Pinnacle Peak-Prescott 230-kV line so it will not exceed two spans.
Purpose	This substation will be needed to serve projected need for electric energy in the area immediately north of the Phoenix Metropolitan area. Additionally, improved reliability and continuity of service will result for the growing communities in the areas of Desert Hills, Anthem, and New River.
Date	
(a) Construction Start	2003
(b) Estimated In Service	2005

A Certificate of Environmental Compatibility is not needed for this project.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2006

Line Designation	Rudd – TS3 – TS4 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	1200 MVA.
(c) Point of Origin	Rudd-Liberty 230-kV transmission line near the intersection of Broadway Road and Perryville Road; within Sec. 28, T1N, R1W.
(d) Intermediate Point	TS3 230/69-kV substation to be constructed in 2006 near the corner of Camelback Rd. and Cotton Ln.; Sec. 24, T2N, R2W.
(e) Point of Termination	A new TS4 230-kV substation located just south of the WAPA Liberty substation, Sec. 19, T1N, R2W.
(f) Length	Approximately 7 miles of double-circuit 230-kV.
Routing	North from the existing Rudd-Liberty 230-kV transmission line approximately 7 miles to the TS3 substation and returning south, back to the existing line. Also, the termination of the line will be moved from the Liberty substation to the TS4 substation.
Purpose	This project will provide a source for the TS3 230/69-kV substation and 69-kV substations planned in the western and southwestern Phoenix Metropolitan area to accommodate the growing need for electric energy in the area. Increased reliability and quality of service will result for customers served by the 230/69-kV substation.
Date	
(a) Construction Start	2002 (The component that was already certificated in Case No. 115, Decision No. 64473, Rudd-Liberty was in-service for the summer of 2003.) Construction for the double-circuit to TS3 will start in 2005.
(b) Estimated In Service	2006

Certificate of Environmental Compatibility issued 2/12/02 (Case No. 115, Decision No. 64473, Southwest Valley Project). Revised on 4/9/02, Decision No. 64704. This CEC is for the 230-kV line, Rudd-Liberty, running east and west on the same poles as the Palo Verde-Rudd 500-kV line. The portion of line running from the existing Rudd-Liberty line to the TS3 substation and for the TS4 substation was sited as part of the West Valley South Project and a Certificate of Environmental Compatibility was issued 12/24/03 (Case No. 122, Decision No. 66646, West Valley South Project).

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2007

Line Designation	Hassayampa – Pinal West 500-kV line 1 & 2.
Size	
(a) Voltage	525-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Hassayampa 500-kV substation; Sec. 15, T1S, R6W.
(d) Intermediate Point	None.
(e) Point of Termination	Pinal West 500/345-kV substation to be constructed in 2007, in the vicinity of the town of Mobile; Sec. 6, T5S, R1E.
(f) Length	Approximately 55 miles of single-circuit 500-kV.
Routing	South and east from Hassayampa, per the Certificate of Environmental Compatibility, to the proposed Pinal West 500-kV substation in the vicinity of the town of Mobile.
Purpose	This project is a result of the CATS study. When combined with the rest of the Southeast Valley project the line will increase import capability to the Phoenix Metropolitan area as well as increase the export capability from the Palo Verde hub. A second circuit was certificated as part of the project for future needs. This project is a joint participation project with SRP as the project manager.
Date	
(a) Construction Start	2004
(b) Estimated In Service	2007

Certificate of Environmental Compatibility issued 5/24/04 (Case No. 124, Decision No. 67012, Southeast Valley Project). SRP, as project manager, holds the CEC.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2007 & 2011

Line Designation	Pinal West – Santa Rosa – Browning 500-kV line.
Size	
(a) Voltage	525-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Pinal West 500/345-kV substation to be constructed in 2006, in the vicinity of the town of Mobile; Sec. 6, T5S, R1E.
(d) Intermediate Point	Santa Rosa 500-kV substation to be constructed in 2007 near the existing Santa Rosa 230-kV substation; Sec. 30, T5S, R4E.
(e) Point of Termination	Browning 500/230-kV substation; Sec. 12, T1S, R8E.
(f) Length	Approximately 55 to 70 miles of single-circuit 500-kV.
Routing	South and east from Pinal West to the proposed Santa Rosa 500-kV substation. Then east and north to the Browning 500/230-kV substation.
Purpose	This project is a result of the CATS study. The line will increase import capability to the Phoenix Metropolitan area as well as increase the export capability from the Palo Verde hub. This project is a joint participation project with SRP as the project manager.
Date	
(a) Construction Start	2005
(b) Estimated In Service	Pinal West-Santa Rosa in 2007. Santa Rosa-Browning in 2011.

As project manager, SRP has filed a CEC application on 10/15/04(Case No. 126) on behalf of the project participants.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2007

Line Designation	Palo Verde-TS5 500-kV line.
Size	
(a) Voltage	525-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Palo Verde switchyard or vicinity.
(d) Intermediate Point	None.
(e) Point of Termination	TS5 500/230-kV substation to be constructed in 2007. Location proposed to be on the south side of the CAP near the Hassayampa Pump Station; approximately T4N, R4W.
(f) Length	Approximately 45 miles of single-circuit line.
Routing	Generally north from Palo Verde vicinity for approximately 45 miles.
Purpose	This line will serve projected need for electric energy in the area immediately north and west of the Phoenix Metropolitan area. It will increase the import capability to the Phoenix Metropolitan area as well as increase the export capability from the Palo Verde hub. This is a joint participation project with APS as the project manager.
Date	
(a) Construction Start	2006
(b) Estimated In Service	2007

APS, on behalf of the project participants, is expected to file an application for a Certificate of Environmental Compatibility during 2005.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2007

Line Designation	TS5-TS1 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	TS5 500/230-kV substation to be constructed in 2007. Location proposed to be on the south side of the CAP near the Hassayampa Pump Station; approximately T4N, R4W.
(d) Intermediate Point	None.
(e) Point of Termination	TS1 230/69-kV substation to be constructed in 2007 proposed to be located west of the Northwest Regional Landfill and north of the existing 500-kV transmission line corridor; approximately T4N, R2W.
(f) Length	Approximately 15 miles of double-circuit 230-kV line.
Routing	East from TS5 substation to TS1 substation for approximately 15 miles.
Purpose	This project is required to serve the increasing need for electric energy in the western Phoenix Metropolitan area, providing more capability to import power into the Phoenix Metropolitan area along with improved reliability and continuity of service for growing communities such as El Mirage, Surprise, Youngtown, and Buckeye. The first circuit is scheduled to be in-service for the summer of 2007 and the in-service date for the second circuit will be evaluated in future planning studies.
Date	
(a) Construction Start	2006
(b) Estimated In Service	2007

The TS5-TS1 230-kV line will be sited as part of the West Valley North project. An application for the Certificate of Environmental Compatibility for the West Valley North project was filed on 11/23/04 (Case No. 127).

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2008

Line Designation	TS3-TS2-TS1 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	TS3 230/69-kV substation to be constructed in 2006 near the corner of Camelback Rd. and Cotton Ln.; Sec. 24, T2N, R2W.
(d) Intermediate Point	TS2 230/69-kV substation to be constructed in 2012; Sec. 25, T3N, R2W.
(e) Point of Termination	TS1 230/69-kV substation to be constructed in 2007 proposed to be located west of the Northwest Regional Landfill and north of the existing 500-kV transmission line corridor; approximately T4N, R2W.
(f) Length	Approximately 12 miles of double-circuit 230-kV line.
Routing	North from the TS3 substation, generally following the Loop 303, to the TS1 substation passing the location of the future TS2 substation which is currently projected to be in-service in 2012.
Purpose	This project is required to serve the increasing need for electric energy in the western Phoenix Metropolitan area, providing more capability to import power into the Phoenix Metropolitan area along with improved reliability and continuity of service for growing communities such as El Mirage, Surprise, Youngtown, and Buckeye. The first circuit is scheduled to be in-service for the summer of 2008 and the in-service date for the second circuit will be evaluated in future planning studies.
Date	
(a) Construction Start	2007
(b) Estimated In Service	2008

The TS3-TS2 230-kV line portion was sited as part of the West Valley South project and a Certificate of Environmental Compatibility was issued 12/24/03 (Case No. 122, Decision No. 66646). The TS1-TS2 230-kV line portion will be sited as part of the West Valley North project. An application for the Certificate of Environmental Compatibility for the West Valley North project was filed on 11/23/04 (Case No. 127).

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2008

Line Designation	Raceway-Avery 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	1200 MVA.
(c) Point of Origin	Raceway substation located along the Westwing-New Waddell 230-kV line, approximately 3 miles south of the New Waddell Dam; Sec. 4, T5N, R1E.
(d) Intermediate Point	None.
(e) Point of Termination	A new Avery substation near Dove Valley Road and 39th Avenue; Sec. 10, T5N, R2E.
(f) Length	Approximately 10 miles of double-circuit line.
Routing	South from Raceway substation approximately 1 mile, paralleling existing transmission lines, then east approximately 9 miles to the new Avery substation.
Purpose	This line will serve projected need for electric energy in the area immediately north of the Phoenix Metropolitan area. Additionally, improved reliability and continuity of service will result for the area's growing communities such as Anthem, Desert Hills and New River. The first circuit is scheduled to be in-service for the summer of 2008 and the in-service date for the second circuit will be evaluated in future planning studies by SRP as part of their planned Westwing-Pinnacle Peak 230-kV project.
Date	
(a) Construction Start	2006
(b) Estimated In Service	2008

Certificate of Environmental Compatibility issued 6/18/03 (Case No. 120, Decision No. 64473, North Valley Project).

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2009

Line Designation	Pinnacle Peak-TS6-Avery 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	1200 MVA.
(c) Point of Origin	Pinnacle Peak substation; Sec. 10, T4N, R4E.
(d) Intermediate Point	TS6 substation to be constructed in 2011; Sec. 8, T4N, R3E.
(e) Point of Termination	Avery substation near Dove Valley Road and 39th Avenue; Sec. 10, T5N, R2E.
(f) Length	Approximately 16 miles of double-circuit line.
Routing	Along the existing 230-kV right-of-way, west 10 miles from Pinnacle Peak substation to approximately Interstate 17, generally parallel to and south of Happy Valley Road; then north 5 miles, generally parallel to Interstate 17, to Dove Valley Road, then west to the new Avery substation.
Purpose	This project will serve projected need for electric energy in the area immediately north of the Phoenix Metropolitan area. Additionally, improved reliability and continuity of service will result for the growing communities in the areas of Anthem, Desert Hills, New River, and north Phoenix. The first circuit is scheduled to be in-service for the summer of 2008 and the in-service date for the second circuit will be evaluated in future planning studies by SRP as part of their planned Westwing-Pinnacle Peak 230-kV project.
Date	
(a) Construction Start	2004
(b) Estimated In Service	2009

Certificate of Environmental Compatibility issued 6/18/03 (Case No. 120, Decision No. 64473, North Valley Project).

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2009

Line Designation	Second Knoll loop-in of Coronado-Cholla 500-kV line.
Size	
(a) Voltage	525-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Coronado-Cholla 500-kV line; Sec. 9, T14N, R21E.
(d) Intermediate Point	None.
(e) Point of Termination	Second Knoll 500/69-kV substation to be built in 2009; Sec. 9, T14N, R21E.
(f) Length	Two single-circuit lines, not to exceed two spans, from the existing line corridor to the Second Knoll substation.
Routing	The Second Knoll substation will be built adjacent to the Coronado-Cholla 500-kV line, therefore limiting the distance to not exceed two spans.
Purpose	This project will be needed to serve projected need for electric energy in Show Low and the surrounding communities.
Date	
(a) Construction Start	2008
(b) Estimated In Service	2009

A Certificate of Environmental Compatibility is not needed for this project.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2009

Line Designation	345/69-kV interconnection at WAPA's Flagstaff 345-kV bus.
Size	
(a) Voltage	345-kV AC.
(b) Capacity	188 MVA.
(c) Point of Origin	WAPA's Flagstaff 345-kV substation; Sec. 24, T21N, R9E.
(d) Intermediate Point	None.
(e) Point of Termination	A new 69-kV substation to be built in 2009 adjacent to WAPA's Flagstaff substation; Sec. 24, T21N, R9E.
(f) Length	Not to exceed two spans.
Routing	A 345/69-kV transformer will interconnect into WAPA's Flagstaff substation.
Purpose	This project will serve projected need for electric energy in APS' northern service area. The project will improve reliability and continuity of service for the growing communities in northern Arizona.
Date	
(a) Construction Start	2008
(b) Estimated In Service	2009

A Certificate of Environmental Compatibility is not needed for this project.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2010

Line Designation	Raceway loop-in of Navajo-Westwing 500-kV line.
Size	
(a) Voltage	525-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Navajo-Westwing 500-kV line; Sec. 4, T5N, R1E.
(d) Intermediate Point	None.
(e) Point of Termination	Raceway 500-kV substation to be constructed in 2010 adjacent to the Navajo-Westwing 500-kV line and approximately 1 mile from the existing Raceway 230-kV substation; Sec. 4, T5N, R1E.
(f) Length	Two single-circuit lines, not to exceed two spans, from the existing line corridor to the Raceway 500-kV substation.
Routing	The Raceway 500-kV substation will be built adjacent to the Navajo-Westwing 500-kV line, therefore limiting the distance to not exceed two spans.
Purpose	The loop-in of the Raceway 500-kV substation will be needed to provide contingency support to Raceway, increase system reliability, and increase the import capability to the Phoenix Metropolitan area.
Date	
(a) Construction Start	2009
(b) Estimated In Service	2010

An application for a Certificate of Environmental Compatibility is not needed for this project.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2010

Line Designation	Raceway 500-kV to Raceway 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Raceway 500-kV substation; Sec. 4, T5N, R1E.
(d) Intermediate Point	None.
(e) Point of Termination	Raceway 230-kV substation; Sec. 4, T5N, R1E.
(f) Length	Approximately 1 mile of double-circuit 230-kV lines from the 500/230kV transformers at the Raceway 500-kV substation to the Raceway 230-kV substation.
Routing	The 230-kV lines would run south from the Raceway 500-kV substation to the Raceway 230-kV substation.
Purpose	The Raceway 500-kV substation will be located north of the existing Raceway 230-kV substation due to physical/geographic constraints. The 500/230-kV transformers will be located at the Raceway 500-kV substation, therefore 230-kV lines are needed between the 500/230kV transformers and the Raceway 230-kV substation.
Date	
(a) Construction Start	2009
(b) Estimated In Service	2010

An application for a Certificate of Environmental Compatibility has not yet been filed.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2010

Line Designation	TS5 – Raceway 500-kV line.
Size	
(a) Voltage	525-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	TS5 500/230-kV substation to be constructed in 2007. Location proposed to be on the south side of the CAP near the Hassayampa Pump Station; approximately T4N, R4W.
(d) Intermediate Point	None.
(e) Point of Termination	Raceway 500-kV substation to be constructed in 2010 adjacent to the Navajo-Westwing 500-kV line and approximately 1 mile from the existing Raceway 230-kV substation; Sec. 4, T5N, R1E.
(f) Length	Approximately 40 miles of single-circuit line.
Routing	North from TS5 substation and then in a northeasterly direction to the Raceway substation.
Purpose	This line will be needed to serve projected need for electric energy in the area immediately north and west of the Phoenix Metropolitan area. It will increase the import capability to the Phoenix Metropolitan area as well as increase the export capability from the Palo Verde hub and provide support for multiple Westwing 500/230kV transformer outages. This will be a joint participation project with APS as the project manager.
Date	
(a) Construction Start	2008
(b) Estimated In Service	2010

An application for a Certificate of Environmental Compatibility has not yet been filed.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2010

Line Designation	Westwing – Raceway 230-kV Line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	1200 MVA.
(c) Point of Origin	Westwing substation; Sec 12, T4N, R1W.
(d) Intermediate Point	None.
(e) Point of Termination	Raceway 230-kV substation located along the Westwing-New Waddell 230-kV line, approximately 3 miles south of the Waddell Dam; Sec. 4, T5N, R1E.
(f) Length	Approximately 7 miles of 230-kV line on double-circuit poles.
Routing	Northeast from Westwing substation paralleling existing transmission lines to the Raceway 230-kV substation.
Purpose	This line will serve increasing loads in the far north and northwest parts of the Phoenix Metropolitan area and provide contingency support for multiple Westwing 500/230-kV transformer outages. The first circuit is scheduled to be in-service for the summer of 2008 and the in-service date for the second circuit will be evaluated in future planning studies by SRP.
Date	
(a) Construction Start	2007
(b) Estimated In Service	2010

Certificate of Environmental Compatibility issued 6/18/03 (Case No. 120, Decision No. 64473, North Valley Project).

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2010

Line Designation	NE3 loop-in of Cholla-Pinnacle Peak 345-kV line.
Size	
(a) Voltage	345-kV AC.
(b) Capacity	188 MVA.
(c) Point of Origin	Cholla-Pinnacle Peak 345-kV line, somewhere between Pinnacle Peak substation and 136th street.
(d) Intermediate Point	None.
(e) Point of Termination	NE3 345/69-kV substation to be built in 2010 somewhere between Pinnacle Peak substation and 136th street adjacent to the existing 345-kV corridor.
(f) Length	Two single-circuit lines, not to exceed two spans, from the existing line corridor to the NE3 substation.
Routing	The NE3 substation will be built adjacent to the Cholla-Pinnacle Peak 345-kV line, therefore limiting the distance to not exceed two spans.
Purpose	This project will serve projected electrical needs in the northeastern Phoenix Metropolitan area including Scottsdale, Phoenix, and Carefree.
Date	
(a) Construction Start	2009
(b) Estimated In Service	2010

A Certificate of Environmental Compatibility is not needed for this project.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2011

Line Designation	Jojoba loop-in of TS4-Gila River 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	188 MVA.
(c) Point of Origin	TS4-Gila River 230-kV line near the existing Jojoba 500-kV switchyard; Sec. 25, T2S, R4W.
(d) Intermediate Point	None.
(e) Point of Termination	Jojoba 230/69-kV substation to be built in 2011, adjacent to the existing Jojoba 500-kV switchyard; Sec. 25, T2S, R4W.
(f) Length	Two single-circuit lines, not to exceed two spans, from the existing line corridor to the Jojoba 230/69-kV substation.
Routing	Jojoba 230/69-kV substation will be adjacent to the TS4-Gila River 230-kV line so it will not exceed two spans.
Purpose	This substation will be needed to serve projected need for electric energy for the growing communities in the areas of Buckeye, Goodyear, and Gila Bend.
Date	
(a) Construction Start	2010
(b) Estimated In Service	2011

An application for a Certificate of Environmental Compatibility has not yet been filed.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2012

Line Designation	Raceway – Pinnacle Peak 500-kV line.
Size	
(a) Voltage	525-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Raceway 500-kV substation to be constructed in 2010 adjacent to the Navajo-Westwing 500-kV line and approximately 1 mile from the existing Raceway 230-kV substation; Sec. 4, T5N, R1E.
(d) Intermediate Point	None.
(e) Point of Termination	Pinnacle Peak 500-kV substation to be constructed in 2012 near the location of the existing Pinnacle Peak 345/230-kV substation; Sec. 10, T4N, R4E.
(f) Length	Approximately 26 miles of single-circuit line.
Routing	East from Raceway 500-kV substation to a new Pinnacle Peak 500-kV substation.
Purpose	This line is a result of joint planning through the SWAT forum. The project is needed to increase the import capability to the Phoenix Metropolitan area and strengthen the transmission system on the east side of the Phoenix Metropolitan valley. This will be a joint participation project with APS as the project manager.
Date	
(a) Construction Start	2010
(b) Estimated In Service	2012

An application for a Certificate of Environmental Compatibility has not yet been filed.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

2012

Line Designation	Palo Verde switchyard (or vicinity)-North Gila 500-kV line or Palo Verde vicinity - North Gila 230-kV line.
Size	
(a) Voltage	525-kV or 230-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Palo Verde switchyard or vicinity.
(d) Intermediate Point	None.
(e) Point of Termination	North Gila 500/69-kV substation or another substation adjacent to the North Gila location; Sec. 11, T8S, R22N.
(f) Length	Approximately 115 miles of single-circuit line.
Routing	West from Palo Verde area to the Yuma area.
Purpose	This line is expected to be a joint project. As a new transmission path to Yuma area, this 500-kV or 230-kV line will provide transmission capacity required to supplement limited transmission and generation resources in the Yuma area.
Date	
(a) Construction Start	2008
(b) Estimated In Service	2012

An application for a Certificate of Environmental Compatibility has not yet been filed.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

TBD

Line Designation	Westwing-El Sol 230-kV line.
Size	
(a) Voltage	230-kV AC.
(b) Capacity	1200 MVA.
(c) Point of Origin	Westwing substation; Sec. 12, T4N, R1W.
(d) Intermediate Point	None.
(e) Point of Termination	El Sol substation; Sec. 30, T3N, R1E.
(f) Length	Approximately 11 miles of single-circuit line.
Routing	Per Certificate.
Purpose	This line will increase system capacity to serve growing demand for electric energy in the Phoenix Metropolitan area, while maintaining system reliability and integrity for delivery of bulk power from Westwing south into the APS Phoenix Metropolitan area 230-kV transmission system.
Date	
(a) Construction Start	TBD
(b) Estimated In Service	TBD

Certificate of Environmental Compatibility issued 7/26/73 (Case No. 9, docket No. U-1345). Note that this Certificate authorizes two double-circuit lines. Construction of the first double-circuit line was completed in March 1975. Construction of the second line, planned to be built with double-circuit capability but initially operated with a single circuit, is described above.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

TBD

Line Designation	Mazatzal loop-in of Cholla-Pinnacle Peak 345-kV line.
Size	
(a) Voltage	345-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Cholla-Pinnacle Peak 345-kV line; near Sec. 3, T8N, R10E.
(d) Intermediate Point	None.
(e) Point of Termination	Mazatzal 345/69-kV substation; approximately Sec. 3, T8N, R10E.
(f) Length	Two single-circuit lines, not to exceed two spans, from the existing line corridor to the Mazatzal substation.
Routing	The Mazatzal substation will be built adjacent to the Cholla-Pinnacle Peak 345-kV line so it will not exceed two spans.
Purpose	This substation will serve projected need for electric energy in the area of Payson and the surrounding communities. Additionally, improved reliability and continuity of service will result for the growing communities in the Payson area.
Date	
(a) Construction Start	TBD
(b) Estimated In Service	TBD

A Certificate of Environmental Compatibility is not needed for this project.

Arizona Public Service Company
2005 – 2014
Ten-Year Plan
Planned Transmission Description

TBD

Line Designation	Palo Verde - Saguaro 500-kV line.
Size	
(a) Voltage	525-kV AC.
(b) Capacity	To be determined.
(c) Point of Origin	Palo Verde Switchyard; Sec. 34, T1N, R6W.
(d) Intermediate Point	None.
(e) Point of Termination	Saguaro substation; Sec. 14, T10S, R10E.
(f) Length	Approximately 130 miles of new line to be built on single-circuit poles or towers. Some sections may be built on double-circuit structures.
Routing	South and east from the Palo Verde switchyard, paralleling existing transmission lines for part of the route. The approved corridor is defined in the CEC identified below.
Purpose	This line is the result of the joint participation CATS study. The line will be needed to increase the adequacy of the existing EHV transmission system and permit increased power delivery throughout the state. It is anticipated the line will be a joint participation project.
Date	
(a) Construction Start	TBD
(b) Estimated In Service	TBD

Certificate of Environmental Compatibility issued 01/23/1976 (Case No. 24, Decision No. 46802).

TRANSMISSION PLANNING PROCESS & GUIDELINES

A subsidiary of Pinnacle West Capital Corporation

TRANSMISSION PLANNING PROCESS AND GUIDELINES

APS Transmission Planning

January 2005

TRANSMISSION PLANNING PROCESS AND GUIDELINES

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I. INTRODUCTION AND PURPOSE

The Transmission Planning Process and Guidelines (Guidelines) are used by Arizona Public Service Company (APS) to assist in planning its Extra High Voltage (EHV) transmission system (345kV and 500kV) and High Voltage transmission system (230kV and 115kV). In addition to these Guidelines, APS follows the Western Electricity Coordinating Council's (WECC) regional planning reliability criteria for system disturbance and performance levels. These WECC Reliability Criteria are (1) WECC/NERC Reliability Criteria for Transmission System Planning and (2) Minimum Operating Reliability Criteria, which can be found in their entirety on the WECC website; (http://www.wecc.biz/documents/library/procedures/WECC_Reliability_Criteria_04-23-04.pdf). These Guidelines are for internal use by APS and may be changed or modified. Thus, others should not use these Guidelines without consultation with APS.

II. PLANNING METHODOLOGY

A. General

APS uses a deterministic approach for transmission system planning. Under this approach, system performance should meet certain specific criteria under normal conditions (all lines in-service) and for any single contingency condition (any one element out-of-service). In general, an adequately planned transmission system will:

- Provide an acceptable level of service that is cost-effective for normal and single contingency operating conditions.
- Maintain service to all firm loads for any single contingency outage; except for radial loads.
- Not result in overloaded equipment or unacceptable voltage conditions for single contingency outages.
- Not result in cascading for single or double contingency outages.
- Provide for the proper balance between the transmission import capability and local generation requirements for an import limited load area.

Although APS uses a deterministic approach for transmission system planning, the WECC reliability planning criteria provides for exceptions based upon a probalistic approach. APS uses these probabilistic criteria when/where appropriate in the transmission planning process. Historical system reliability performance is analyzed on a periodic basis and the results are used in the design of planned facilities.

These planning methodologies, assumptions, and guidelines are used as the basis for the development of future transmission facilities. Additionally, consideration of potential alternatives to transmission facilities (such as distributed generation or new technologies) is evaluated on a case-specific basis.

As new planning tools and/or information become available revisions or additions to these guidelines will be made as appropriate.

B. Transmission Planning Process

APS' transmission planning process consists of an assessment of the following needs:

- Provide adequate transmission to access sufficient resources in-order to reliably and economically serve loads.
- Support APS' local transmission and sub-transmission systems.
- Provide for interconnection for new resources.
- Accommodate requests for long-term transmission access.

During this process, consideration is given to load growth patterns, other system changes affected by right-of-way, facilities siting constraints, routing of future transportation corridors, and joint planning with neighboring utilities and governmental entities.

1. EHV Transmission Planning Process

APS' EHV transmission system, which consists of 500kV and 345kV, has primarily been developed to provide transmission to bring the output of large base-loaded generators to load centers, such as Phoenix. Need for new EHV facilities may result from any of the bullet items described above. APS' annual planning process includes an assessment of APS' transmission

capability to ensure that sufficient resources can be accessed to reliably and economically serve loads. In addition, biennial RMR studies are performed to ensure that proper balance between the transmission import capability and local generation requirements for an import limited load area are maintained.

2. 230kV Transmission Planning Process

APS' 230kV transmission system has primarily been developed to provide transmission to distribute power from the EHV bulk power substations and local generators to the distribution system and loads throughout the load areas.

Planning for the 230kV system assesses the need for new 230/69kV substations to support local sub-transmission and distribution system growth and the reliability performance of the existing 230kV system. This process takes into account the future land use plans that were developed by government agencies, Landis aerial photo maps, master plans that were provided by private developers, and APS' long-range forecasted load densities per square mile for residential, commercial, and industrial loads.

3. Transmission Facilities Required for Generation/Resource Additions

New transmission facilities may also be required in conjunction with generation resources due to (1) a "merchant" request by an Independent Power Producer (IPP) for generator interconnection to the APS system, (2) a "merchant" request for point-to-point transmission service from the generator (receipt point) to the designated delivery point, or (3) designation of new resources or re-designation of existing units to serve APS network load (including removal of an older units' native load designation). These studies/processes are performed pursuant to the APS Open Access Transmission Tariff (OATT).

C. Ten Year Transmission System Plans

Each year APS uses the planning process described in section B to update the Ten-Year Transmission System Plan. The APS Ten Year Transmission System Plan identifies all new transmission facilities, 115kV and above, and all

facility replacements/upgrades required over the next ten years to reliably and economically serve the load.

D. Regional Coordinated Planning

1. Western Electricity Coordinating Council (WECC)

APS is a member of the Western Electricity Coordinating Council. The focus of the WECC is on promoting the reliability of the interconnected bulk electric system. The WECC provides the means for:

- Developing regional planning and operating criteria.
- Coordinating future plans.
- Compiling regional data banks for use by the member systems and the WECC in conducting technical studies.
- Assessing and coordinating operating procedures and solutions to regional problems.
- Establishing an open forum with interested non-project participants to review the plan of service for a project.

APS works with WECC to adhere to these planning practices.

2. Sub-Regional Planning Groups

Southwest Area Transmission Planning (SWAT), Southwest Transmission Expansion Plan (STEP), Seams Steering Group – Western Interconnection (SSG-WI), and other sub-regional planning groups provide a forum for entities within a region, and any other interested parties, to determine and study the needs of the region as a whole. It also provides a forum for specific projects to be exposed to potential partners and allows for joint studies and participation from interested parties.

3. Joint Studies

In many instances, transmission projects can serve the needs of several utilities and/or IPPs. To this end, joint study efforts may be undertaken. Such joint study efforts endeavor to develop a plan that will meet the needs and desires of all individual companies involved.

E. Generation Schedules

For planning purposes, economic dispatches of network resources are determined for APS' system peak load in the following manner:

a. Determine base generation available and schedule these units at maximum output.
b. Determine resources purchased from other utilities, IPPs, or power marketing agencies.
c. Determine APS' spinning reserve requirements.
d. Schedule intermediate generation (oil/gas steam units) such that the spinning reserve requirements, in section (c) above, are met.
e. Determine the amount of peaking generation (combustion turbine units) required to supply the remaining system peak load.

Phoenix area network resources are dispatched based on economics and any existing import limitations. When possible, spinning reserve will be carried on higher cost Phoenix area network generating units.

Generation output schedules for interconnected utilities and IPPs are based upon consultation with the neighboring utilities and IPPs or as modeled in the latest data in WECC coordinated study cases.

F. Load Projections

APS substation load projections are based on the APS Corporate Load Forecast. Substation load projections for neighboring interconnected utilities or power agencies operating in the WECC area are based on the latest data in WECC coordinated study cases. Heavy summer loads are used for the Ten-Year Transmission System Plans.

G. Alternative Evaluations

1. General

In evaluating several alternative plans, comparisons of power flows, transient stability tests, and fault levels are made first. After the alternatives are found that meet the system performance criteria in each of these three

areas comparisons may be made of the losses, transfer capability, impact on system operations, and reliability of each of the plans. Finally, the costs of facility additions (capital cost items), costs of losses, and relative costs of transfer capabilities are determined. A brief discussion of each of these considerations follows.

2. Power Flow Analyses

Power flows of base case (all lines in-service) and single contingency conditions are tested and should conform to the system performance criteria set forth in Section IV of these Guidelines. Double or multiple contingencies are examined, but in general, no facilities are planned for such conditions. Normal system voltages, voltage deviations, and voltage extreme limitations are based upon operating experience resulting in acceptable voltage levels to the consumer. Power flow limits are based upon the thermal ratings and/or sag limitations of conductors or equipment, as applicable.

3. Transient Stability Studies

Stability guidelines are established to maintain system stability for single contingency, three-phase fault conditions. Double or multiple contingencies are examined, but in general, no facilities are planned for such conditions.

4. Short Circuit Studies

Three-phase and single-phase-to-ground fault studies are performed to ensure the adequacy of system protection equipment to clear and isolate faults.

5. Reactive Power Margin Analyses

Reactive Power Margin analyses are performed when steady-state analyses indicate possible insufficient voltage stability margins. V-Q curve analyses are used to determine post-transient voltage stability.

6. Losses Analyses

A comparison of individual element and overall transmission system losses are made for each alternative plan being studied. The losses computed in the power flow program consist of the I^2R losses of lines and transformers and the core losses in transformers, where represented.

7. Transfer Capability Studies

In evaluating the relative merits of one or more EHV transmission plans, both simultaneous and non-simultaneous transfer capability studies are performed to determine the magnitude of transfer capabilities between areas or load centers.

8. Subsynchronous Resonance (SSR)

SSR phenomenon result from the use of series capacitors in the network where the tuned electrical network exchanges energy with a turbine generator at one or more of the natural frequencies of the mechanical system. SSR countermeasures are applied to prevent damage to machines as a result of transient current or sustained oscillations following a system disturbance. SSR studies are not used directly in the planning process. SSR countermeasures are determined after the transmission plans are finalized.

9. FACTS (Flexible AC Transmission System)

FACTS essentially involves the controlling of series capacitor impedances. A series capacitor bank can be controlled by thyristors to do the following:

a) change its effective impedance to control the power flow
b) to make dynamic changes in its impedance in-order to provide damping of oscillations

FACTS will be evaluated as a means of power flow control and/or to provide damping to dynamic oscillations where a need is identified and it is economically justified.

10. Economic Evaluation

In general, an economic evaluation of alternative plans consists of a cumulative present worth or equivalent annual cost comparison of capital costs.

III. PLANNING ASSUMPTIONS

A. General

1. Loads

Loads used for the APS system originate from the latest APS Corporate Load Forecast. In most cases, the corrected power factor of APS loads is 99.5% at 69kV substations.

2. Generation and Other Resources

Generation dispatch is based on firm power and/or transmission wheeling contracts including network resources designations.

3. Normal Voltage Levels

a. Nominal EHV design voltages are 500kV, 345kV, 230kV, and 115kV.

b. Nominal EHV operating voltages are 535kV, 348kV, 239kV, and 119kV.

4. Sources of Databases

WECC Heavy Summer base cases are the sources of the databases. Loop flow (unscheduled flow), of a reasonable amount and direction, will be allowed for use in planning studies.

5. Voltage Control Devices

Devices which can control voltages are shunt capacitors, shunt reactors, tap-changing-under-load (TCUL) and fixed-tap transformers, static VAR compensators, and machine VAR capabilities. If future voltage control devices are necessary, these devices will be evaluated based upon economics and the equipment's ability to obtain an adequate voltage profile on the EHV and HV systems.

6. Phase Shifters

In general, where phase shifters are used, schedules are held across the phase shifter in base case power flows and the phase shifter tap remains fixed in the outage cases.

7. Conductor Sizes

Existing transmission voltages utilized by APS are 230kV, 345kV, and 500kV. It is presently planned that the 345kV transmission system will not be expanded, thus all future APS EHV lines will be 500kV or 230kV. Planned

500kV lines will initially be modeled using tri-bundled 1780 kCM ACSR conductor (Chukar). Preferred construction for 230kV lines consists of 2156 kCM ACSS conductor on steel poles.

8. 69kV System Modeling

230kV facility outages may result in problems to the underlying 69kV system due to the interconnection of those systems. For this reason, power flow cases include a detailed 69kV system representation. Solutions to any problems encountered on the 69kV system are coordinated with the subtransmission planning engineers.

9. Substation Transformers

a. 500kV and 345kV Substations

Bulk substation transformer banks may be made up of one three-phase or three single-phase transformers, depending upon bank size and economics. For larger banks where single-phase transformers are used, a fourth (spare) single-phase transformer will be used in a jack-bus arrangement to improve reliability and facilitate connection of the spare in the event of an outage of one of the single-phase transformers. TCUL will be considered in the high voltage windings, generally with a range of plus or minus 10%. High voltage ratings will be 500kV or 345kV class and low voltage windings will be 230kV, 115kV, or 69kV class.

b. 230kV Substations

For high-density load areas, both 230/69kV and 69/12.5kV transformers can be utilized. 230/69kV transformers will be rated at 113/150/188 MVA with a 65°C temperature rise, unless otherwise specified. 69/12.5kV transformers will be rated at 25/33/41 MVA with a 65°C temperature rise, unless otherwise specified.

With all elements in service, a transformer may be loaded up to its top Forced Oil Air (FOA) rating without sustaining any loss of service life. For a single contingency outage (loss of one transformer) the remaining transformer or transformers may be loaded up to 20% above their top FOA rating, unless heat test data indicate a different overload capability. The

loss of service life sustained will depend on the transformer pre-loading and the outage duration. Tap setting adjustment capabilities on 230/69kV transformers will be ±5% from the nominal voltage setting (230/69kV) at 2½% increments.

10. Switchyard Arrangements

a. 500kV and 345kV Substations

Existing 345kV switchyard arrangements use breaker-and-one-half, main-and-transfer, or modified paired-element circuit breaker switching schemes. Because of the large amounts of power transferred via 500kV switchyards and the necessity of having adequate reliability, all 500kV circuit breaker arrangements are planned for an ultimate breaker-and-one-half scheme. If only three or four elements are initially required, the circuit breakers are connected in a ring bus arrangement, but physically positioned for a breaker-and-one-half scheme. The maximum desired number of elements to be connected in the ring bus arrangement is four. System elements such as generators, transformers, and lines will be arranged in breaker-and-one-half schemes such that a failure of a center breaker will not result in the loss of two lines routed in the same general direction and will minimize the impact of losing two elements.

b. 230kV Substations

Future 230/69kV substations should be capable of serving up to 452 MVA of load. 400 MVA has historically been the most common substation load level in the Phoenix Metropolitan area. Future, typical 230/69kV substations should accommodate up to four 230kV line terminations and up to three 230/69kV transformer bays. Based upon costs, as well as reliability and operating flexibility considerations, a breaker-and-one-half layout should be utilized for all future 230/69kV Metropolitan Phoenix Area substations, with provision for initial development to be a ring bus. Any two 230/69kV transformers are to be

separated by two breakers, whenever feasible, so that a stuck breaker will not result in an outage of both transformers.

11. Series Capacitor Application

Series capacitors may be used on EHV lines to increase system stability, for increased transfer capability, and/or for control of power flow. The series capacitors may be lumped at one end of a line because of lower cost; however, the capacitors are generally divided into two banks, one at either end of a line, for improved voltage profile.

12. Shunt and Tertiary Reactor Application

Shunt and/or tertiary reactors may be installed to prevent open end line voltages from being excessive, in addition to voltage control. The open end line voltage must not be more than 0.05 per unit voltage greater than the sending end voltage. Tertiary reactors may also be used for voltage and VAR control as discussed above.

B. Power Flow Studies

1. System Stressing

Realistic generation capabilities and schedules should be used to stress the transmission system in order to maximize the transfer of resources during the maximum load condition.

2. Displacement

In cases where displacements (due to power flow opposite normal generation schedules) may have an appreciable effect on transmission line loading, a reasonable amount of displacement (Generation Units) may be removed in-order to stress a given transmission path.

C. Transient Stability Studies

1. Fault Simulation

When studying system disturbances caused by faults, two conditions will be simulated:

a. Three-phase-to-ground faults, and

b. Single-line-to-ground faults with a stuck circuit breaker in one phase with back-up delayed clearing.

2. Margin

a. Generation margin may be applied for the contingencies primarily affected by generation, or

b. Power flow margin may be applied for the contingencies primarily affected by power flow.

3. Unit Tripping

Generator unit tripping may be allowed in-order to increase system stability performance.

4. Machine Reactance Representation

For transient stability studies, the unsaturated transient reactance of machines with full representation will be used.

5. Fault Damping

Fault damping will be applied to the generating units adjacent to faults. Fault damping will be determined from studies that account for the effect of generator amortisseur windings and the SSR filters.

6. Series Capacitor Switching

Series capacitors, locations to be determined from short circuit studies, will be flashed and reinserted as appropriate.

D. Short Circuit Studies

Three-phase and single-phase-to-ground faults will be evaluated.

1. Generation Representation

All generation will be represented.

2. Machine Reactance Representation

The saturated subtransient reactance (X''_d) values will be used.

3. Line Representation

The transmission line zero sequence impedance (X_0) is assumed to be equal to three times the positive sequence impedance (X_1).

4. Transformer Representation

The transformer zero sequence impedance (X_0) is assumed to be equal to the positive sequence impedance (X_1). Bulk substation transformers are modeled as auto-transformers. The two-winding model is that of a grounded-wye transformer. The three-winding model is that of a wye-delta-wye with a solid ground.

E. Reactive Power Margin Studies

Using Q-V curve analyses, APS assesses the interconnected transmission system to ensure there are sufficient reactive resources located throughout the electric system to maintain post-transient voltage stability for system normal conditions and certain contingencies.

IV. SYSTEM PERFORMANCE

A. Power Flow Studies

1. Normal (Base Case Conditions)

a. Voltage Levels

1) General

(a) 500kV bus voltages will be maintained between 1.05 and 1.08 p.u. on a 500kV base.

(b) 345kV bus voltages will range between .99 and 1.04 p.u. on the 345kV system.

(c) 500kV and 345kV system voltages are used to maintain proper 230kV bus voltages.

(d) Voltage on the 230kV and 115kV system should be between 1.01 p.u. and 1.05 p.u.

(e) Tap settings for 230/69kV and 345/69kV transformers should be used to maintain low side (69kV) voltages of 1.03 to 1.04 p.u. Seasonal tap changes may be required.

2) Specific Buses

(a) APS Pinnacle Peak 230kV bus voltage should be between 1.025 p.u. and 1.035 p.u.

(b) APS Westwing 230kV bus voltage should be between 1.04 p.u. and 1.05 p.u.

(c) Saguaro 115kV bus voltage will be approximately 1.035 p.u.

(d) Voltage at the Prescott (DOE) 230kV bus should be approximately 1.02 p.u.

b. Facility Loading Limits

1) Transmission Lines

Transmission line loading cannot exceed 100% of the continuous rating, which is based upon established conductor temperature limit or sag limitation.

2) Underground Cable

Underground cable loading should not exceed 100% of the continuous rating with all elements in service. This rating is based on a cable temperature of 85°C with no loss of cable life.

3) Transformers

Transformers cannot exceed 100% of top FOA, 65°C rise, nameplate ratings.

4) Series Capacitors

Series Capacitors cannot exceed 100% of continuous rating.

c. Interchange of VARs

Interchange of VARs between companies at interconnections will be reduced to a minimum and maintained near zero.

d. Distribution of Flow

Schedules on a new project will be compared to simulated power flows to ensure a reasonable level of flowability.

2. Single Contingency Outages

a. Voltage Levels

Maximum voltage deviation on APS' major buses cannot exceed 5%. This deviation level yields a close approximation to the post-transient VAR margin requirements of WECC.

b. Facilities Loading Limits

1) Transmission Lines

Transmission line loading cannot exceed 100% of the lesser of the sag limit or the emergency rating (30-minute rating) which is based upon established conductor temperature limits.

2) Underground Cable

Underground cable loading should not exceed the emergency rating during a single-contingency outage. This rating is based on a cable temperature of 105°C for two hours of emergency operation with no loss of cable life.

3) Transformers

Transformers cannot exceed 120% of top FOA, 65°C rise, nameplate ratings.

4) Series Capacitors

Series Capacitors cannot exceed 100% of emergency rating.

c. Generator Units

Generator units used for controlling remote voltages will be modified to hold their base case terminal voltages.

d. Impact on Interconnected System

Single contingency outages will not cause overloads upon any neighboring transmission system.

B. Transient Stability Studies

Transient stability studies are primarily performed on the 500kV and 345kV systems.

1. Fault Simulation

Three-phase-to-ground faults and single-line-to-ground faults, simulating a stuck circuit breaker in one phase with back-up delayed clearing will be simulated. Fault clearing times of four cycles after fault inception (5 cycles for a 230kV fault) and a back-up clearing time of twelve cycles after fault inception is utilized. System elements are switched out at the appropriate clearing times, as applicable. Fault damping will be applied when applicable at fault inception.

2. Series Capacitor Switching

Series capacitors, at locations determined from short-circuit studies, will be flashed at fault inception and will be reinserted depending on their reinsertion types.

3. System Stability

The system will be considered stable if the following conditions are met:

a. All machines in the system remain synchronized as demonstrated by the relative rotor angles.

b. Positive system damping exists as demonstrated by the damping of relative rotor angles and the damping of voltage magnitude swings. For N-1 disturbances, voltages for the first swing after fault clearing should not drop below 75% of pre-fault value with maximum time duration of 20 cycles for voltage dip exceeding 20%.

4. Re-closing

Automatic re-closing of circuit breakers controlling EHV facilities is not utilized.

C. Short Circuit Studies

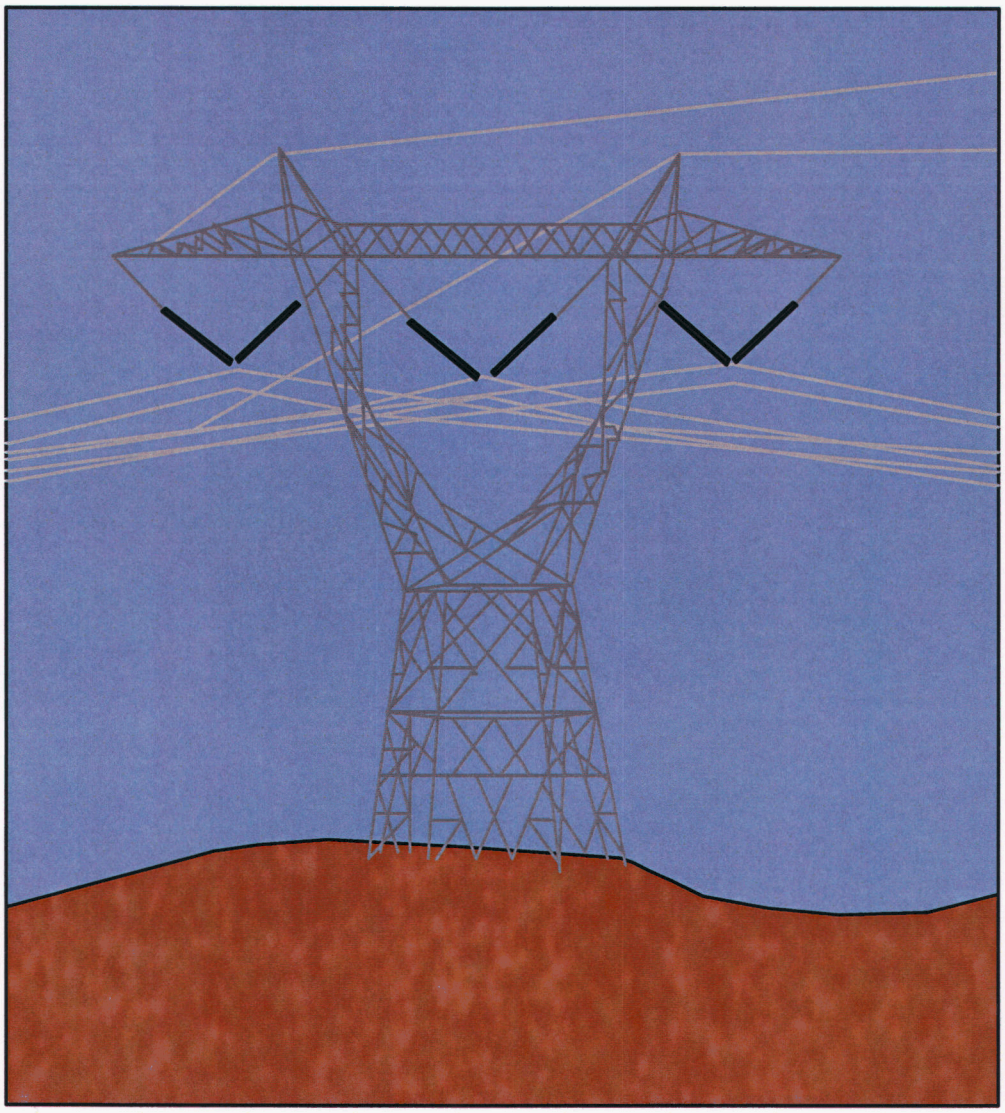
Fault current shall not exceed 100% of the applicable breaker fault current interruption capability for three-phase or single-line-to-ground faults.

D. Reactive Power Margin Studies

For system normal conditions or single contingency conditions, post-transient voltage stability is required with a path or load area modeled at a minimum of 105% of the path rating or maximum planned load limit for the area under study, whichever is applicable. For multiple contingencies, post-transient voltage stability is required with a path or load area modeled at a minimum of 102.5% of the path rating or maximum planned load limit for the area under study, whichever is applicable.

2004 SYSTEM RATING MAPS

2004 SYSTEM RATING MAPS



Prepared By

Transmission Operations
August, 2004

LEGEND
SYSTEM RATING MAPS

SYMBOL	DESCRIPTION
### / ### / ###	CURRENT LIMIT IN AMPS LIMITING ELEMENT CONDUCTOR LIMIT IN AMPS
	TRANSFORMER LIMITS ARE IN MVA
————	OVERHEAD TRANSMISSION LINE
– – – – – –	UNDERGROUND CABLE
M	MOTOR OPERATED SWITCH
V	VACCUM SWITCH
H	HYDRAULIC SWITCH
1	BREAKER NUMBER

TABLE OF CONTENTS

LEGEND ——————————————————— 1

EHV CONTINUOUS ——————————————————— 2

EHV EMERGENCY ——————————————————— 4

METRO 230kV CONTINUOUS ——————————————————— 6

METRO 230kV EMERGENCY ——————————————————— 7

NORTHERN 230kV CONTINUOUS ——————————————————— 8

NORTHERN 230kV EMERGENCY ——————————————————— 9

SOUTHERN 230kV CONTINUOUS ——————————————————— 10

SOUTHERN 230kV EMERGENCY ——————————————————— 11

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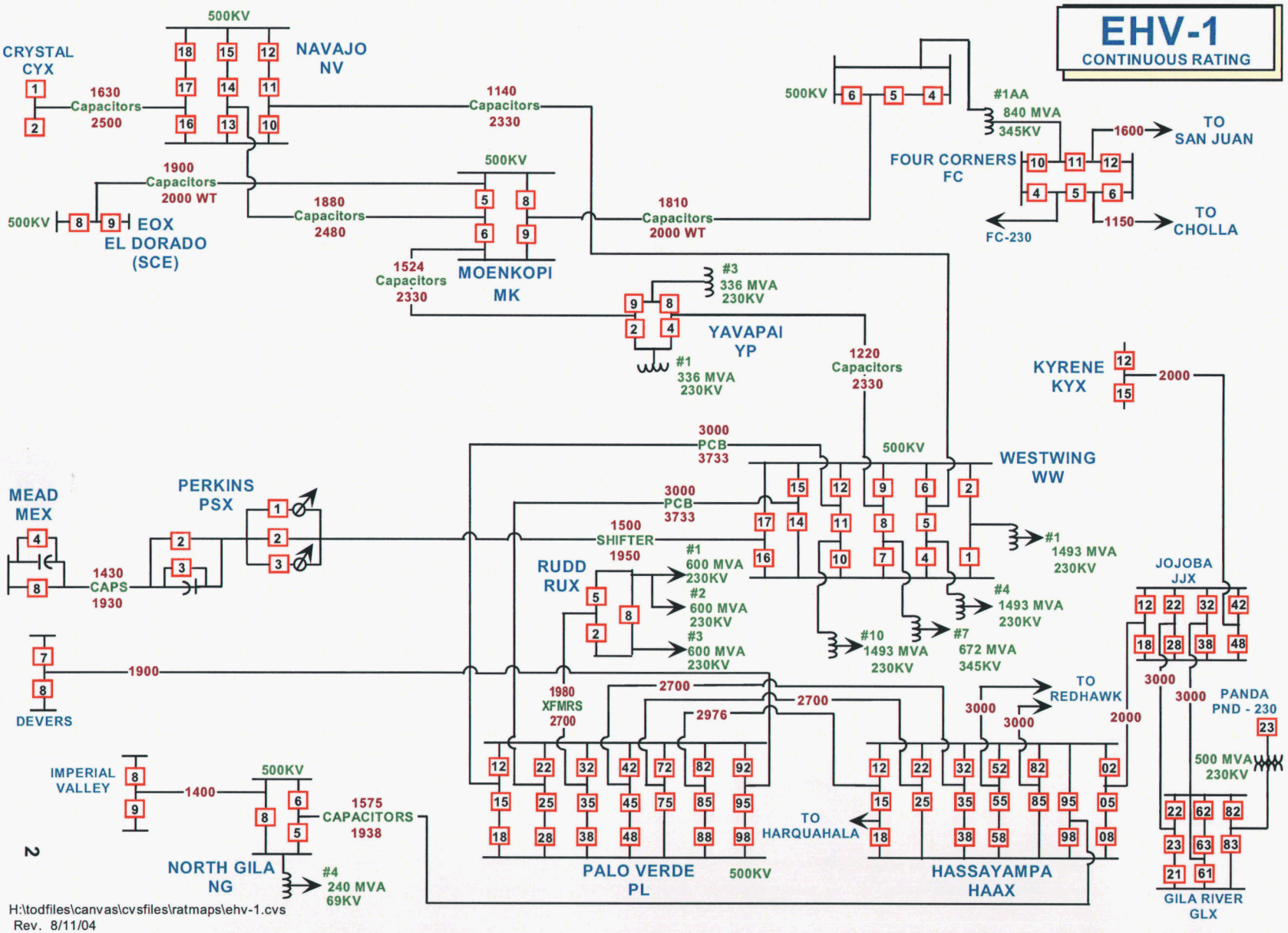
EHV-1
CONTINUOUS RATING
CRYSTAL
CYX
1630
Capacitors
2500
500KV
NAVAJO
NV
1140
Capacitors
2330
1900
Capacitors
2000 WT
500KV
EOX
EL DORADO
(SCE)
1880
Capacitors
2480
500KV
MOENKOPI
MK
1524
Capacitors
2330
1810
Capacitors
2000 WT
500KV
#1AA
840 MVA
345KV
FOUR CORNERS
FC
1600
TO
SAN JUAN
1150
TO
CHOLLA
FC-230
#3
336 MVA
230KV
YAVAPAI
YP
#1
336 MVA
230KV
1220
Capacitors
2330
KYRENE
KYX
2000
3000
PCB
3733
500KV
WESTWING
WW
MEAD
MEX
PERKINS
PSX
1430
CAPS
1930
3000
PCB
3733
1500
SHIFTER
1950
RUDD
RUX
#1
600 MVA
230KV
#2
600 MVA
230KV
#3
600 MVA
230KV
#1
1493 MVA
230KV
#4
1493 MVA
230KV
#10
1493 MVA
230KV
#7
672 MVA
345KV
JOJOBA
JJX
1900
DEVERS
1980
XFMRS
2700
2700
2700
2976
TO
REDHAWK
3000
3000
2000
3000
PANDA
PND - 230
500 MVA
230KV
IMPERIAL
VALLEY
1400
500KV
1575
CAPACITORS
1938
NORTH GILA
NG
#4
240 MVA
69KV
PALO VERDE
PL
500KV
TO
HARQUAHALA
HASSAYAMPA
HAAX
GILA RIVER
GLX
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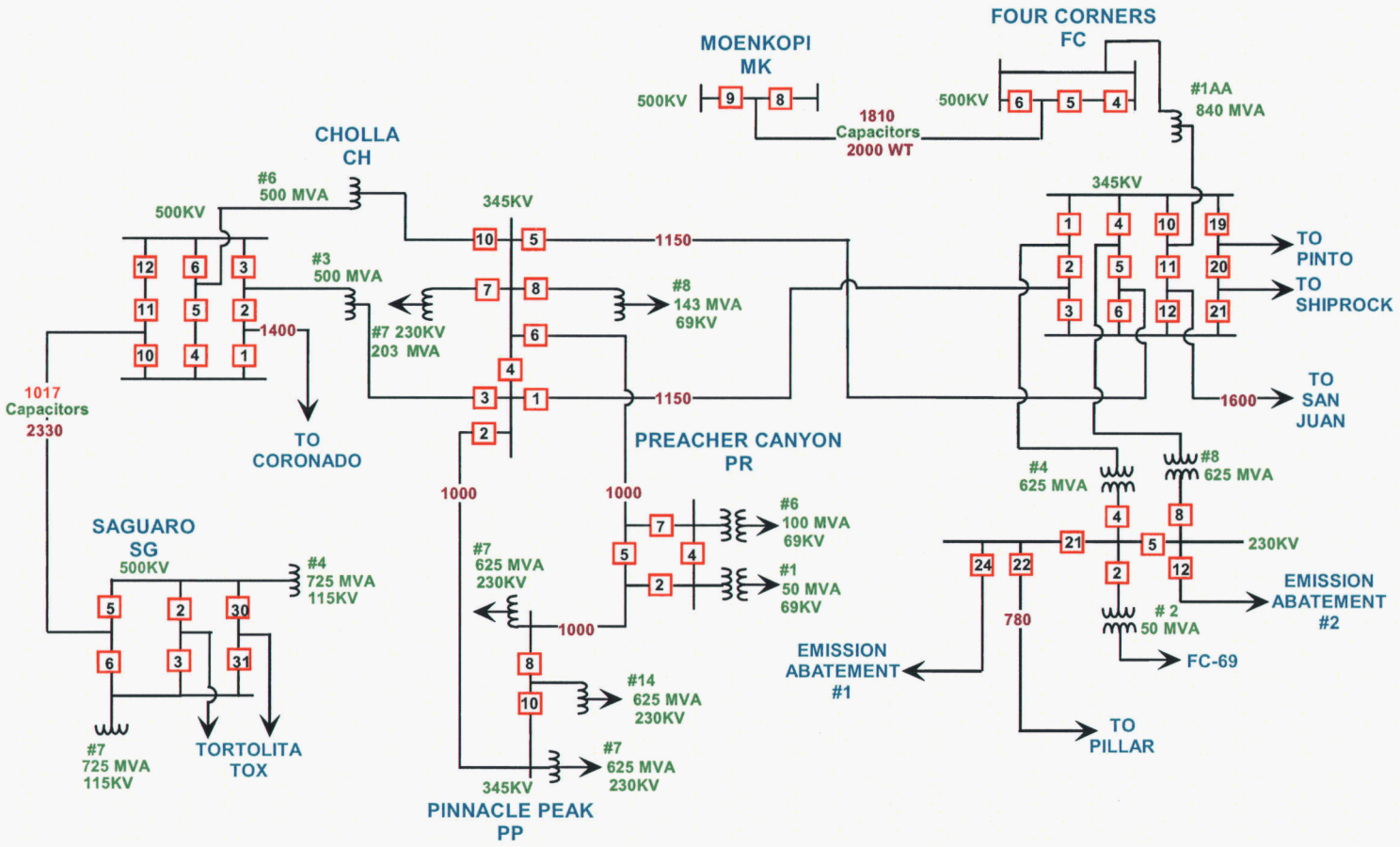
Rev. 8/11/04

EHV-2
CONTINUOUS RATING



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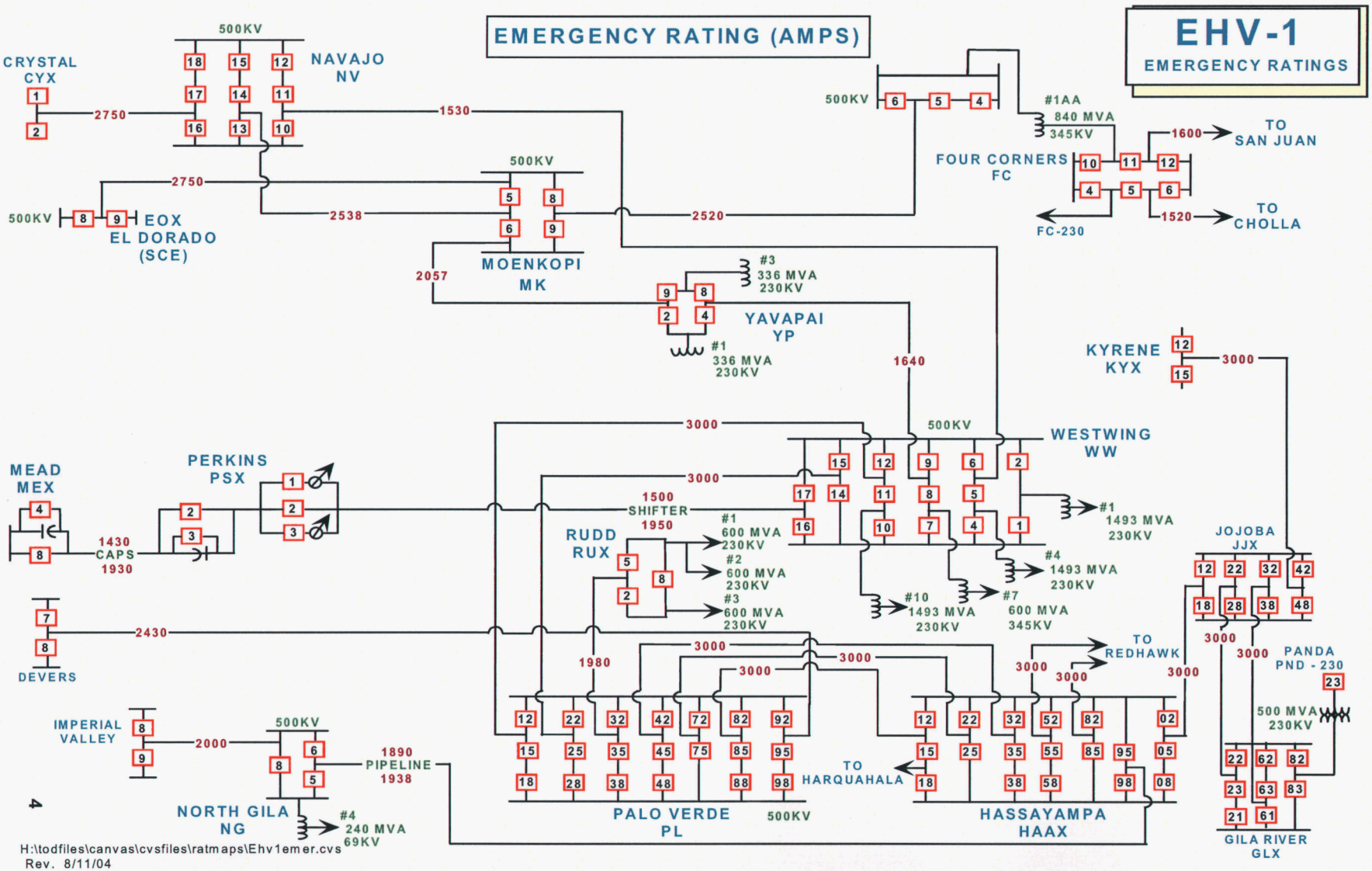

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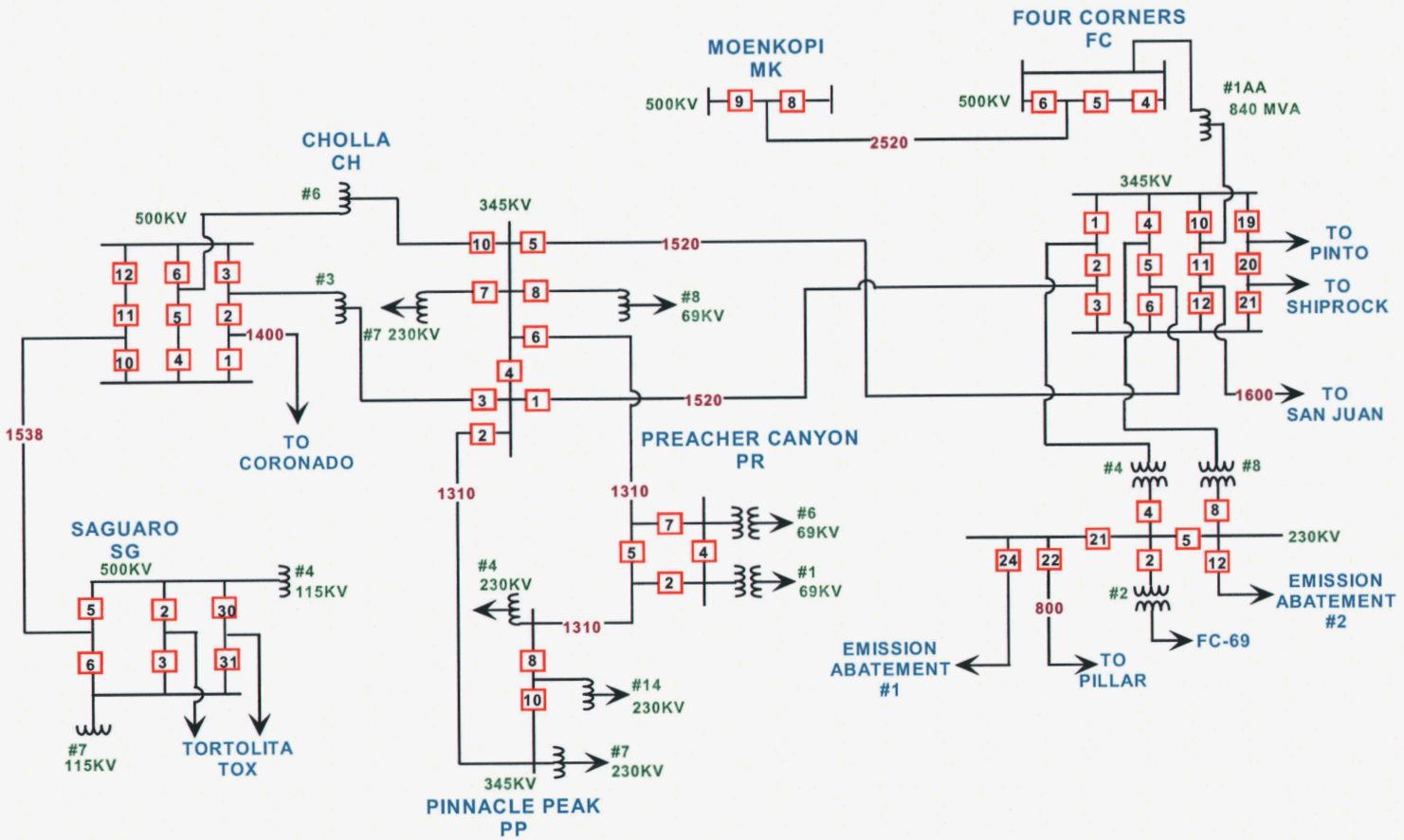
Rev. 8/11/04

EHV-2
EMERGENCY RATINGS

EMERGENCY RATING (AMPS)



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Rev. 07/08/04

METRO 230KV

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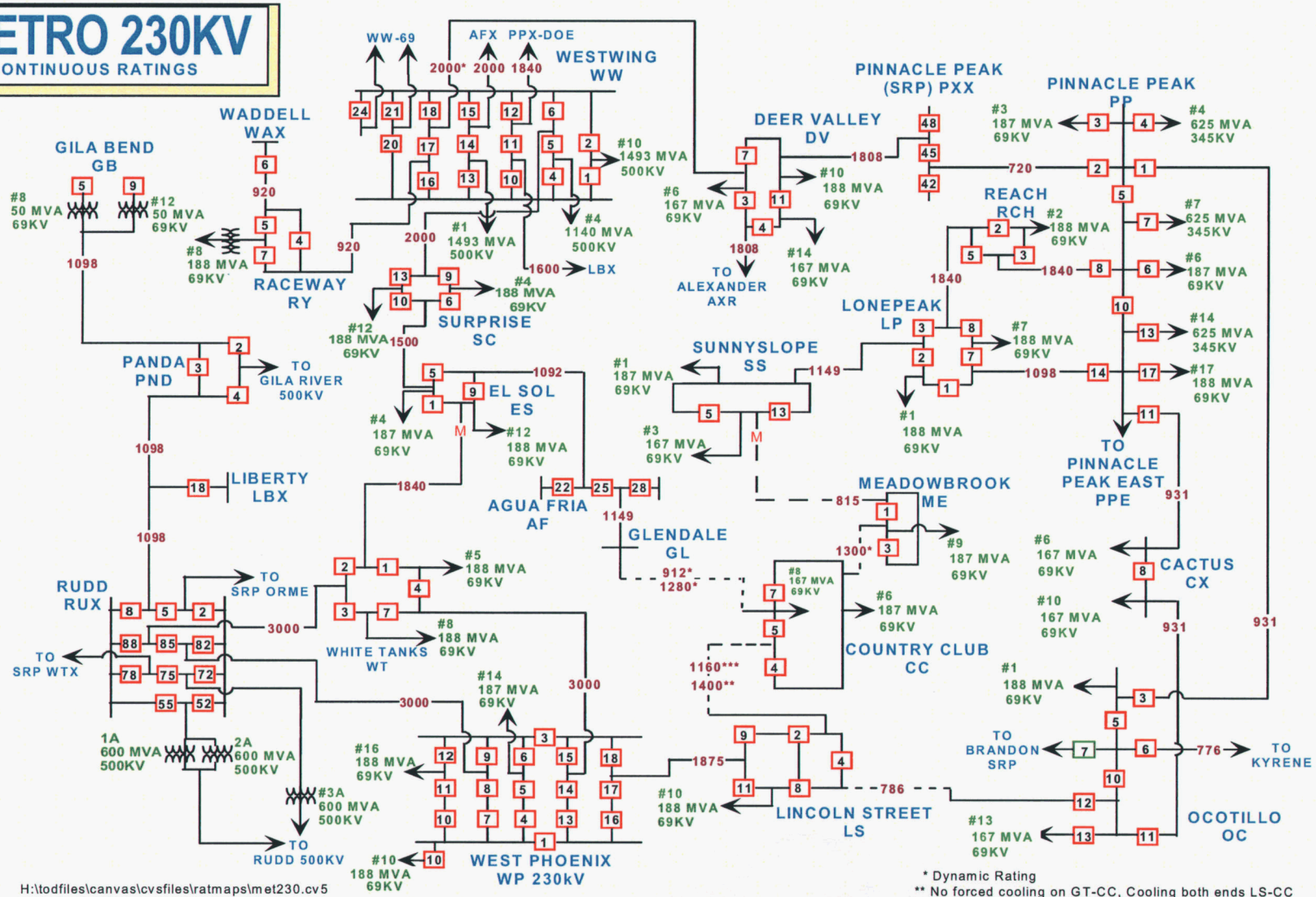

* Dynamic Rating
** No forced cooling on GT-CC, Cooling both ends LS-CC
*** Forced cooling on GT-CC, Cooling one end LS-CC

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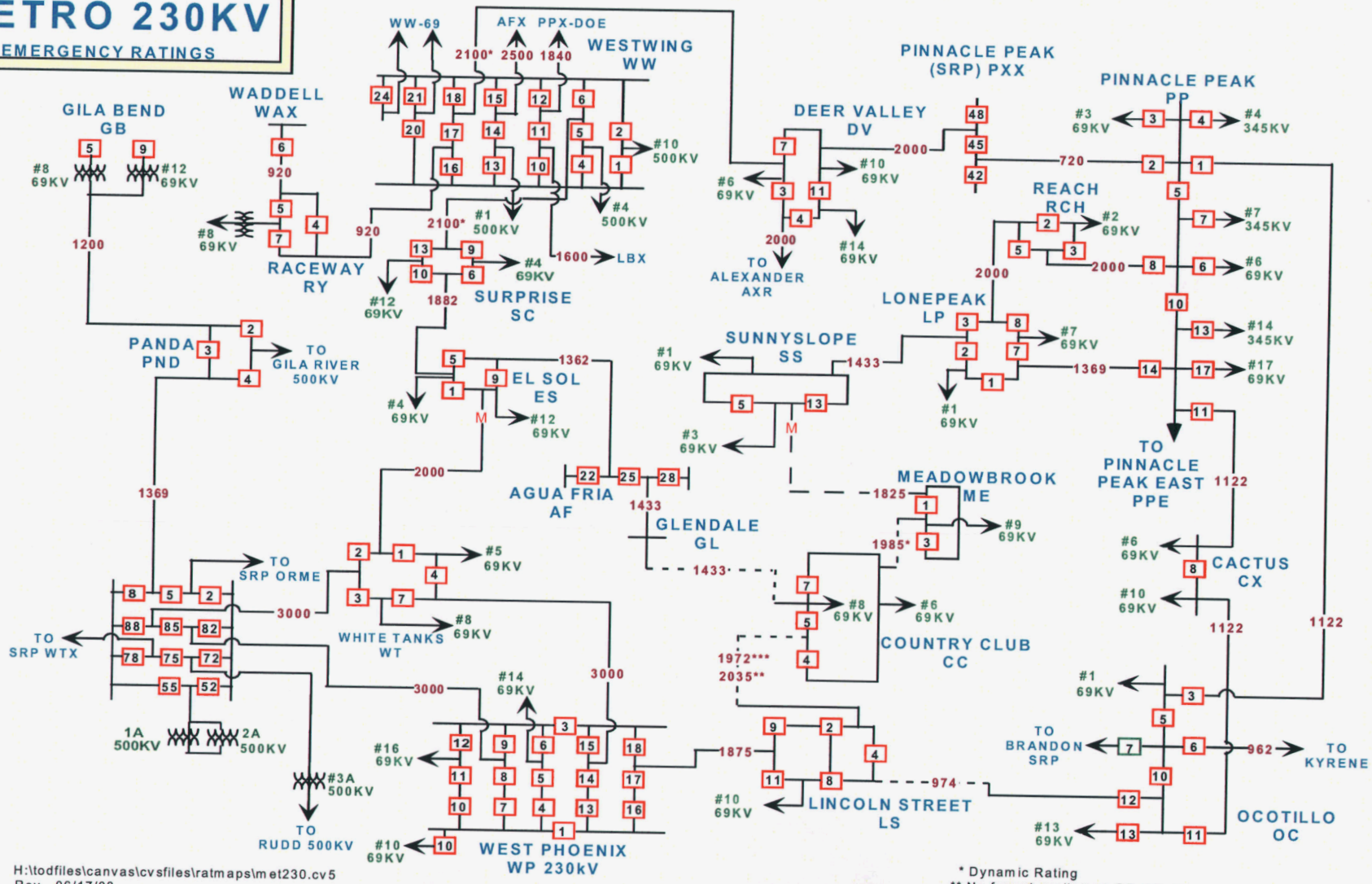
Rev. 08/03/04

METRO 230KV

EMERGENCY RATINGS



* Dynamic Rating
** No forced cooling on GT-CC, Cooling both ends LS-CC
*** Forced cooling on GT-CC, Cooling one end LS-CC

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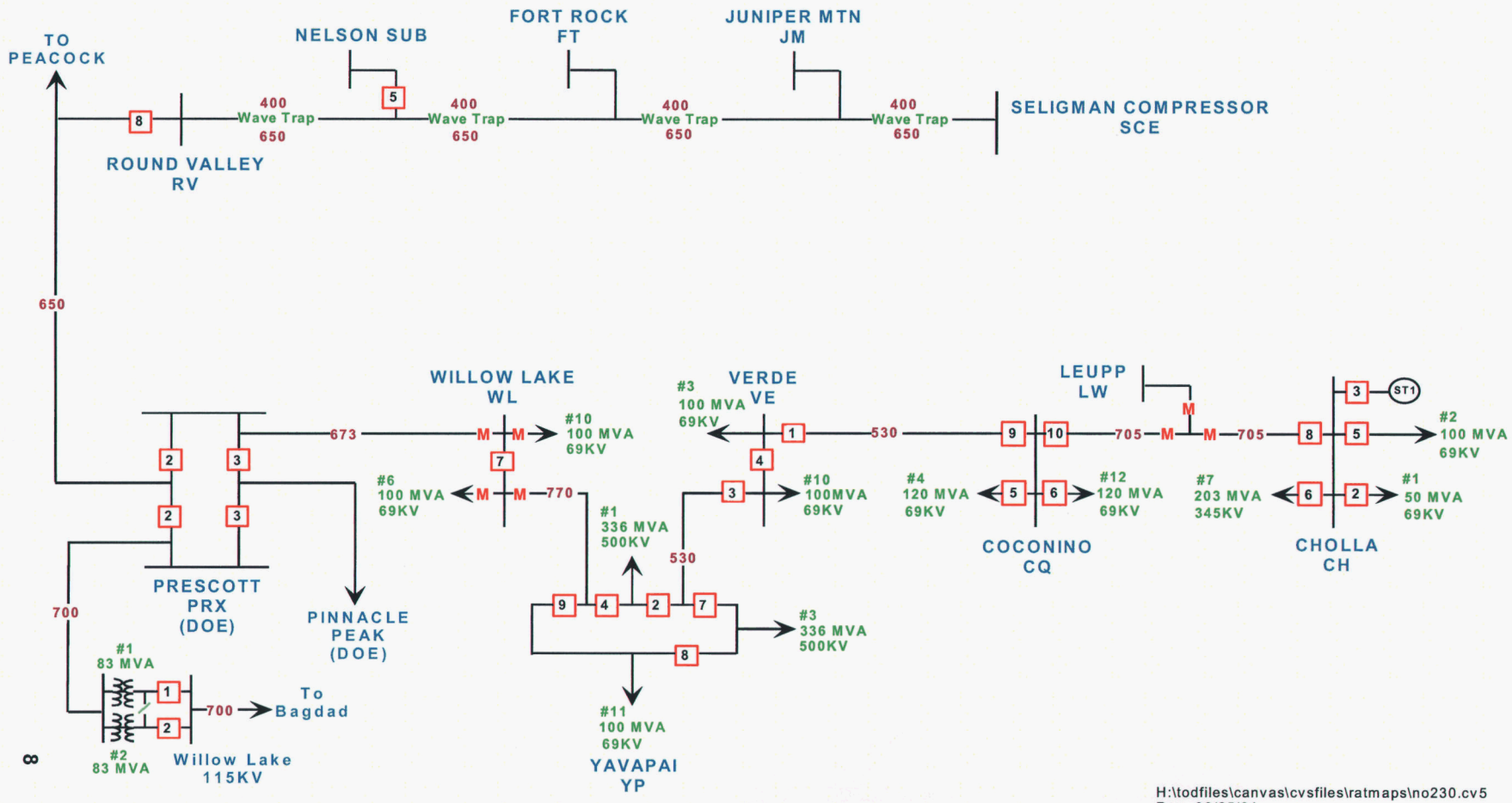
Rev. 06/17/03

NORTHERN 230KV

CONTINUOUS RATINGS



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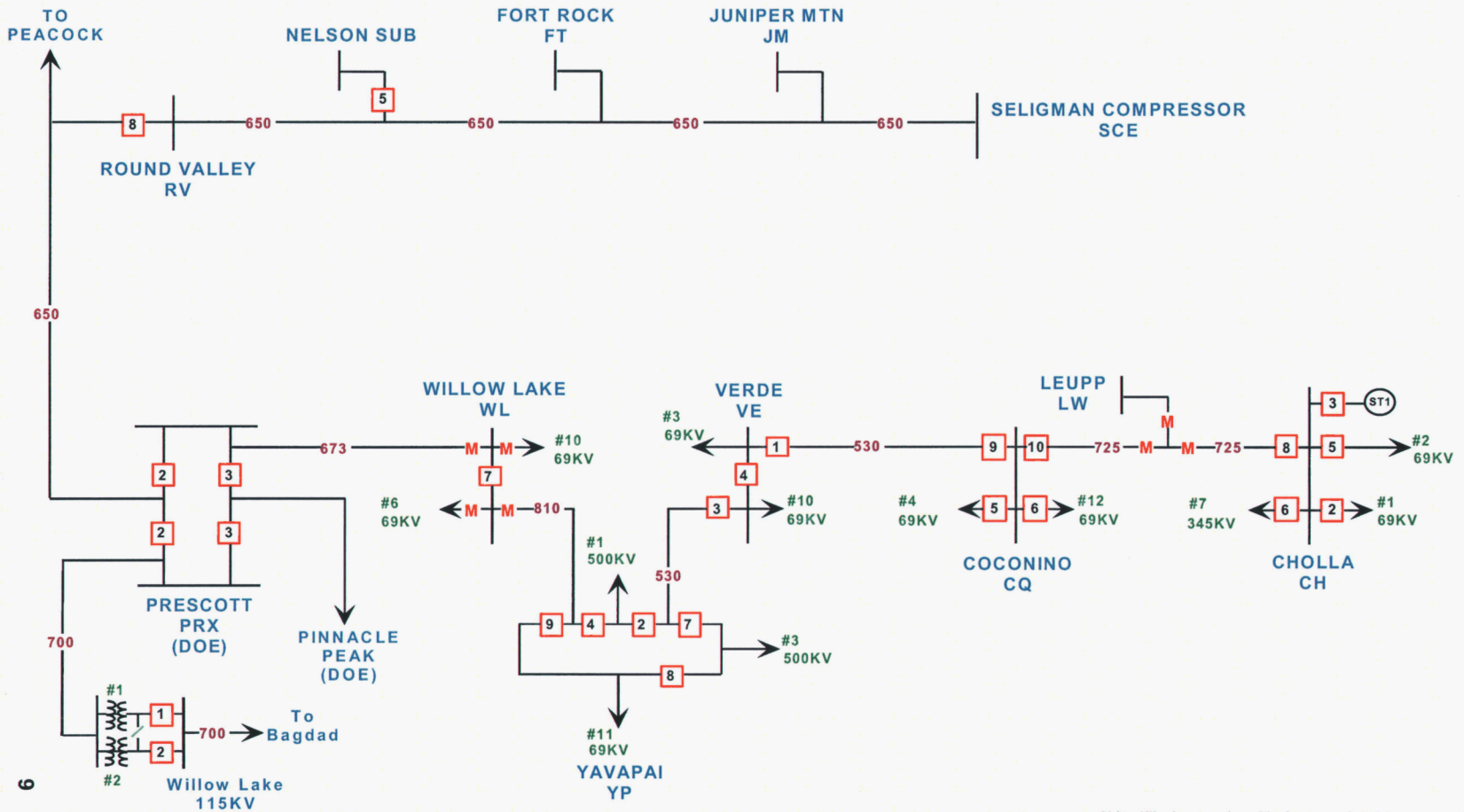
NORTHERN 230KV

EMERGENCY RATINGS

EMERGENCY RATING (AMPS)



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SOUTHERN 230KV

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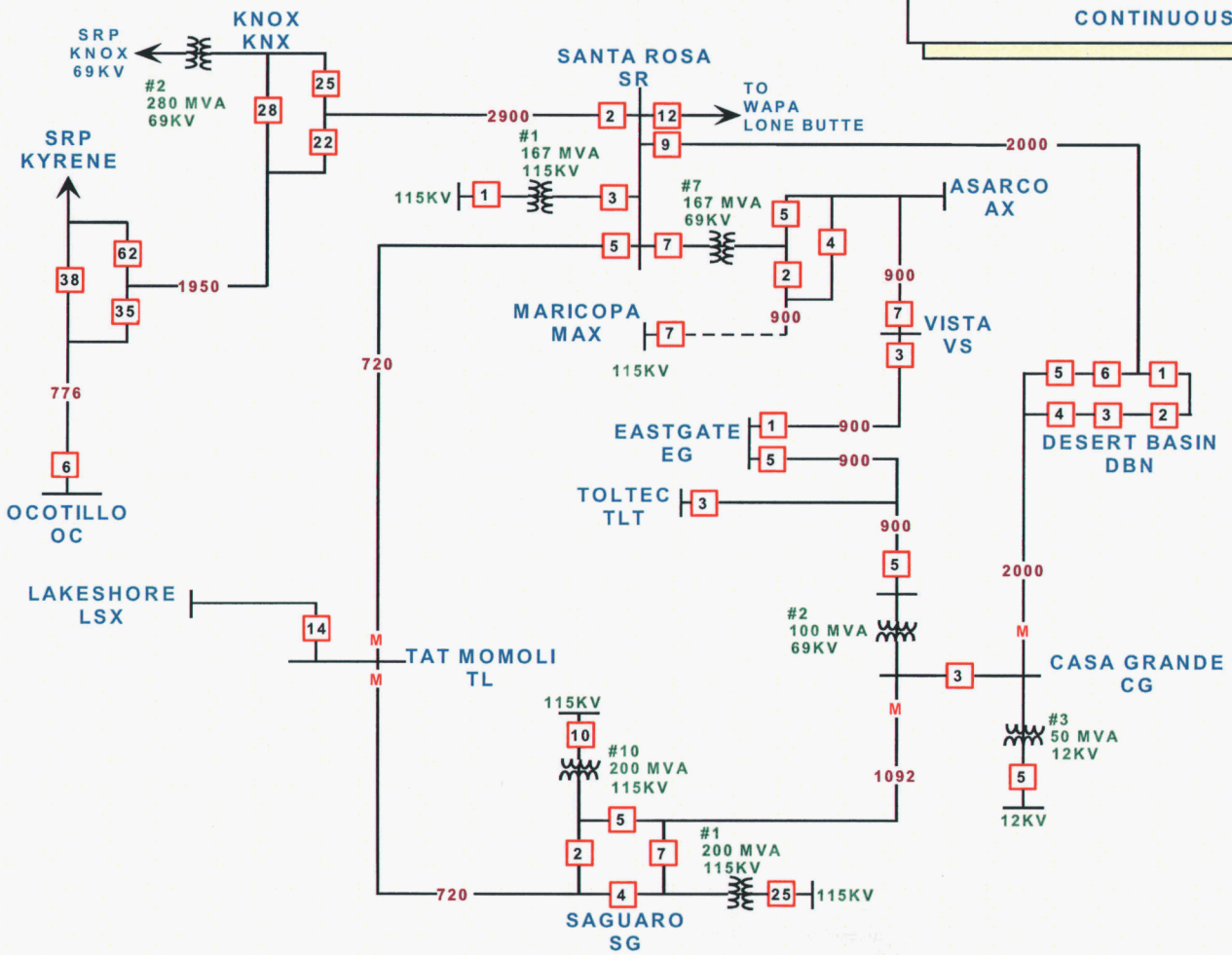

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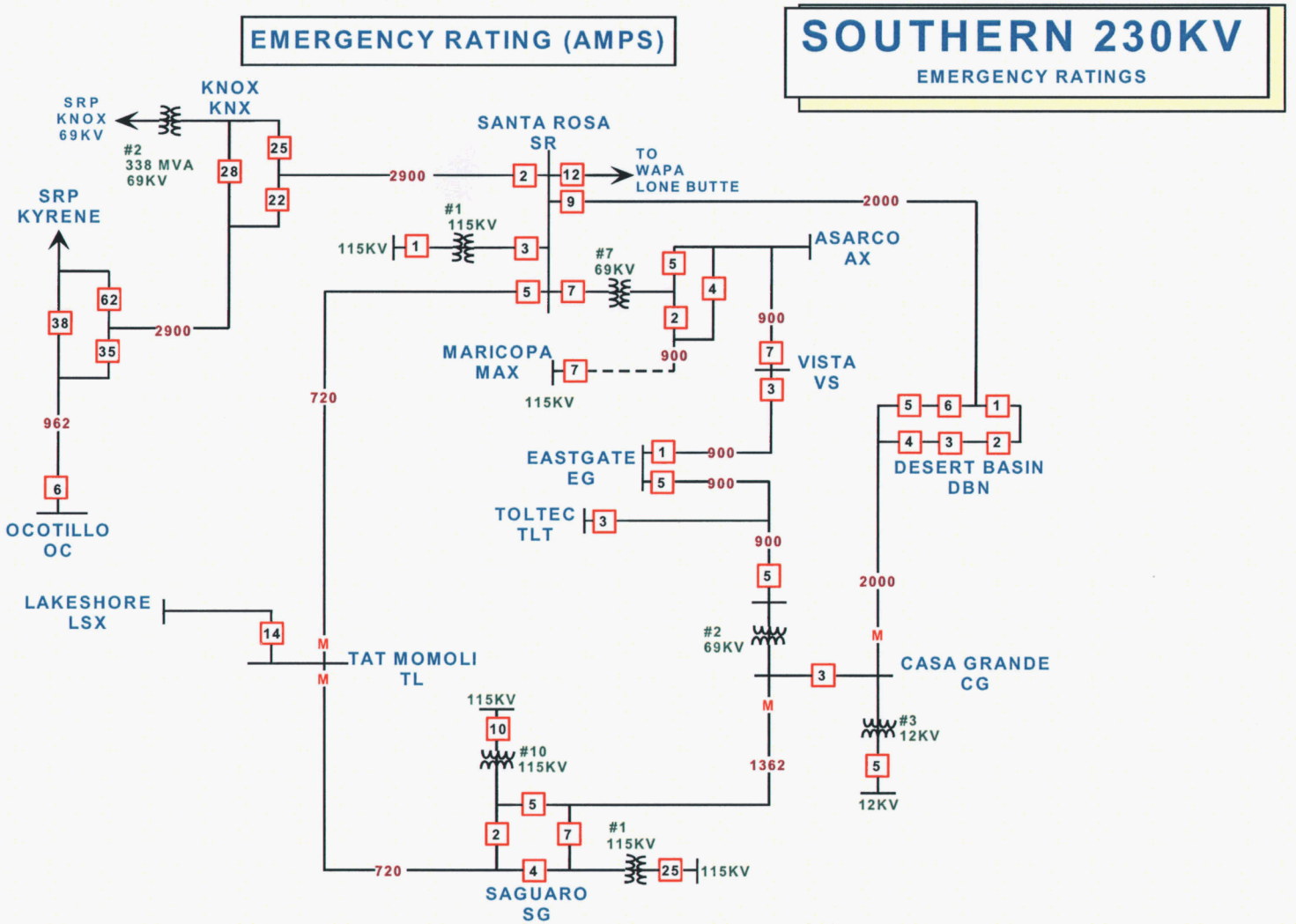

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Rev. 06/17/03

TECHNICAL STUDY REPORT

ARIZONA PUBLIC SERVICE COMPANY

TEN-YEAR PLAN

2005 – 2014

TECHNICAL STUDY REPORT

FOR

THE ARIZONA CORPORATION COMMISSION

JANUARY 2005

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ARIZONA PUBLIC SERVICE COMPANY
2004-2013
TEN-YEAR PLAN
TECHNICAL STUDY REPORT

I. Introduction

This technical study report is filed with the ACC pursuant to A.R.S. § 40-360.02, as amended by House Bill 2040, and Arizona Corporation Commission ("Commission") Decision No. 63876 (July 25, 2001) regarding the Biennial Transmission Assessment prepared by Commission Utilities Division Staff.

Two aspects of technical studies were performed and reported here. They are power flow analyses and stability analyses. Power flow analysis was performed for two scenarios. The first is for all transmission system elements being in service. All system elements must be within its continuous rating. The second scenario is for the outage of a single element. All remaining system elements must remain within its emergency ratings. Voltage deviations for these scenarios must also be within established guidelines. These voltage deviation guidelines closely approximate post-transient var margin requirements of the Western Electricity Coordinating Council. More detail is provided in APS' Transmission Planning Process and Guidelines, which is also included in this filing.

The stability analyses were performed to simulate electrical disturbances on the transmission system and evaluate the system response. The desired result is that all generators will remain on line, no additional lines will open, and the system oscillations will damp out.

Results of the power flow and stability analyses aid in determining when and where new electrical facilities are needed because of reliability or security reasons. Additionally, some facilities are planned to address adequacy concerns. These include the interconnection of generation to the transmission system or efforts to increase import capability to load-constrained or other areas.

II. Power Flow Analyses

Power flow cases were created for each year of the 2005-2014 study time frame. These cases represent the latest transmission and sub-transmission plans, load projections, and resource plans of utilities and independent power producers. Base case and single contingency conditions are evaluated to determine system needs and timing. Various iterations of possible solutions lead to the final plans for transmission additions.

The contingency analysis involves simulations for every non-radial 115kV or above line that APS owns, partially owns, or operates. Transformer outages are also evaluated. Results of the power flow studies are tabulated in a Security Needs Table and an Adequacy Needs Table, below. These tables identify twenty two transmission projects that are included in this Ten-Year Plan filing. Some of the projects were classified as Adequacy Needs because of the uncertainty of generation location, size, and availability

in the later years. As projects near the five-year planning time frame, they may be redefined as Security Needs projects. Selected maps of the power flow simulations are contained in the appendix. Some projects reference study work that was performed in Regional Planning Groups and will not have any power flow maps associated with them in this filing.

Security Needs Table

Transmission Project	In Service Year	Critical Outage	Limiting Element	Map
Gavilan Peak 230/69kV substation.	2005	A Pinnacle Peak 230/69kV transformer	The remaining two 230/69kV transformers at Pinnacle Peak.	A1-A4
Rudd-TS3-TS4 230kV lines.	2006	White Tanks 230/69kV transformer.	White Tanks 230/69kV xfmr #2 & voltage deviation at White Tanks & 69kV system busses.	A5-A6
PV-TS5 500kV line & TS5-TS1 230kV line.	2007	Loss of Surprise 230/69kV transformer, Westwing 230/69kV transformer, or El Sol 230/69kV transformer.	Loss of a 230/69kV transformer at any of the three substations overloads the remaining transformer at that substation.	A7-A18
Raceway-Avery 230kV line.	2008	Raceway transformer & local 69kV lines.	Voltage deviation at Avery & 69kV system lines.	A19-A22
Second Knoll 500kV substation.	2009	Cholla-Zeniff 69kV line or Cholla-Showlow 69kV line.	Voltage deviations and line overloads on the sub-transmission system in the area resulting in load shedding.	A23-A24
Pinnacle Peak-TS6-Avery 230kV lines.	2009	A Pinnacle Peak 230/69kV transformer.	The remaining two 230/69kV transformers at Pinnacle Peak.	A25-A26
Loop-in of Navajo-Westwing 500kV to Raceway 500kV substation and Raceway 500kV to 230kV substation.	2010	All lines in-service (N-0).	Westwing-Raceway 230kV line.	A27-A28
Loop-in of Cholla-Pinnacle Peak 345kV line to NE3 345kV substation	2010	A Pinnacle Peak 230/69kV transformer.	The remaining two 230/69kV transformers at Pinnacle Peak.	A29-A30
Loop-in of TS4-Gila River 230kV line to Jojoba 230kV substation	2011	Buckeye 230/69kV #6 transformer	Buckeye 230/69kV #2 transformer	A31-A32

Adequacy Needs Table

Transmission Project	In Service Year	System Benefits	Map
Hassayampa-Pinal West 500kV line. Pinal West-Santa Rosa-S.E. Valley 500kV line.	2006-2007	Increases import capability for the Phoenix metropolitan area, increases the export capability from the PV area. Increases transmission system reliability and ability to deliver power.	No Map. See SWAT study report.
TS3-TS2-TS1 230kV line.	2008	Provides a second source for TS1 so TS1 is not served as a radial substation, thereby increasing system reliability. Also provides the transmission sources for the TS2 substation in 2012.	No Map.
Flagstaff 345/69kV interconnection.	2009	Maintains system voltages and increases the reliability of service in the Flagstaff/Verde area for the loss of 230kV sources at Coconino.	A33-A34
Loop-in of Navajo-Westwing 500kV to Raceway 500kV substation, Raceway 500kV to 230kV substation, and Westwing-Raceway 230kV line #2.	2010	Provide a backup for outage of Westwing 500/230kV transformers. Increases import capability for the Phoenix metropolitan area, increases the export capability from the PV area.	A35-A36
TS5-Raceway 500kV line.	2010	Provides a second source for TS5. Increases import capability for the Phoenix Metropolitan area, increases the export capability from the PV area.	No Map. See SWAT study report.
Raceway-Pinnacle Peak 500kV line.	2012	Increases import capability for the Phoenix Metropolitan area. Increases transmission system reliability and ability to deliver power.	No Map. See SWAT study report.
Palo Verde vicinity to North Gila 500kV or 230kV line.	2012	Increases import capability for the Yuma area allowing APS to serve the growing load. Increases transmission system reliability.	A37-A38
Westwing-El Sol 230kV line.	TBD	Increase transmission system reliability and ability to deliver power.	No Map
Mazatzal 345kV substation.	TBD	Increase transmission system reliability and ability to deliver power.	No Map
Palo Verde-Saguaro 500kV line.	TBD	Increase transmission system reliability and ability to deliver power.	No Map. See SWAT study report.

III. Stability Analysis

A stability simulation for simulated three-phase faults was performed for 2007 and 2014 for every 345kV or 500kV line that APS owns (totally or partially) or operates. It has been APS' experience that stability concerns do not manifest on the 230kV system, which is primarily designed to deliver power to load. Therefore, no 230kV simulations

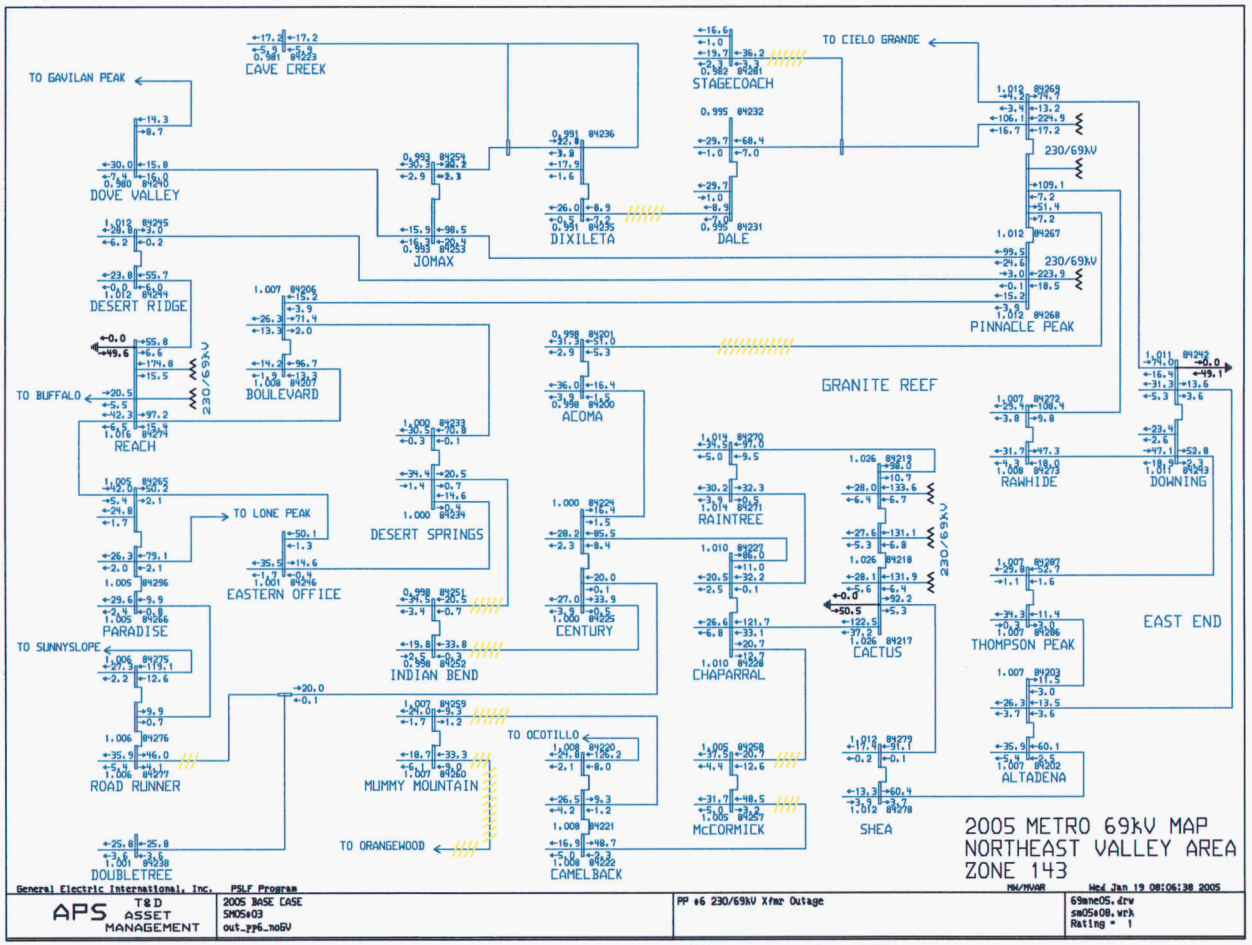
were performed. Additionally, every new proposed generation plant will be required to perform stability evaluations prior to receiving permission to interconnect to the transmission system.

Each simulation modeled a 3-phase bus fault, appropriate series capacitor flashing and reinsertion, and fault removal and transmission line removal. System performance was evaluated by monitoring representative generator rotor angles, bus voltages and system frequency. Plots of these system parameters are included in Appendices B and C. The stability simulations performed to date indicate that no stability problems limit the transmission system.

APPENDIX A
POWER FLOW MAPS

APPENDIX A

Power Flow Maps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CAVE CREEK
DOVE VALLEY
JOMAX
DIXILETA
STAGECOACH
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DALE
DESERT RIDGE
BOULEVARD
PINNACLE PEAK
230/69kV
TO BUFFALO
REACH
ACOMA
GRANITE REEF
RAWHIDE
DOWNING
TO LONE PEAK
EASTERN OFFICE
DESERT SPRINGS
RAINTREE
CACTUS
EAST END
PARADISE
TO SUNNYSLOPE
INDIAN BEND
CENTURY
CHAPARRAL
THOMPSON PEAK
ROAD RUNNER
MUMMY MOUNTAIN
TO OCOTILLO
McCORMICK
SHEA
ALTADENA
TO ORANGEWOOD
DOUBLETREE
CAMELBACK
2005 METRO 69kV MAP
NORTHEAST VALLEY AREA
ZONE 143
General Electric International, Inc.
PSLF Program
APS T&D ASSET MANAGEMENT
2005 BASE CASE
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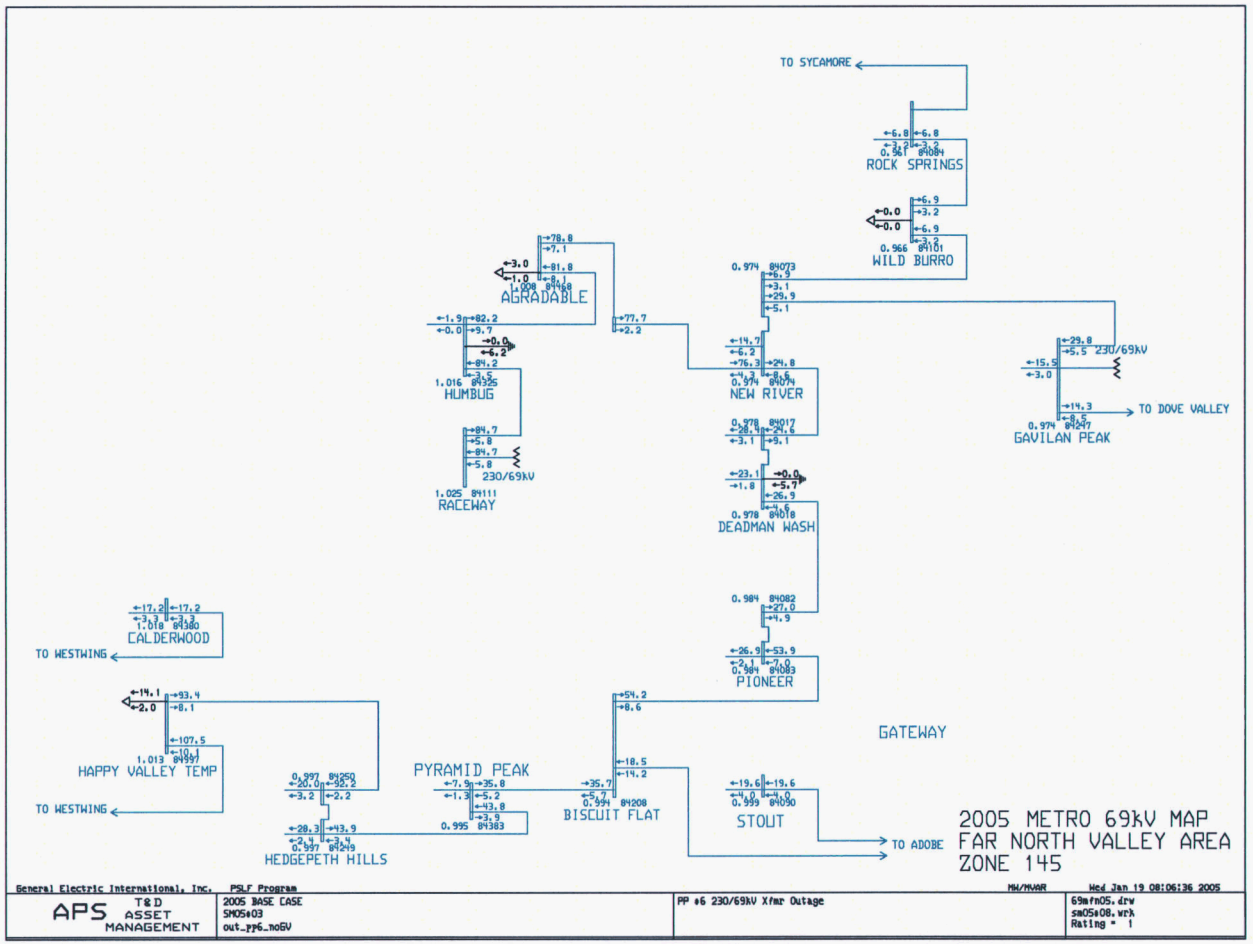
TO SYCAMORE
ROCK SPRINGS
WILD BURRO
AGRADABLE
HUMBUG
RACEWAY
230/69kV
NEW RIVER
GAVILAN PEAK
TO DOVE VALLEY
DEADMAN WASH
PIONEER
GATEWAY
CALDERWOOD
TO WESTWING
HAPPY VALLEY TEMP
TO WESTWING
HEDGEPETH HILLS
PYRAMID PEAK
BISCUIT FLAT
STOUT
TO ADOBE
2005 METRO 69kV MAP
FAR NORTH VALLEY AREA
ZONE 145
General Electric International, Inc.
PSLF Program
MW/MVAR
Wed Jan 19 08:06:36 2005
APS T&D ASSET MANAGEMENT
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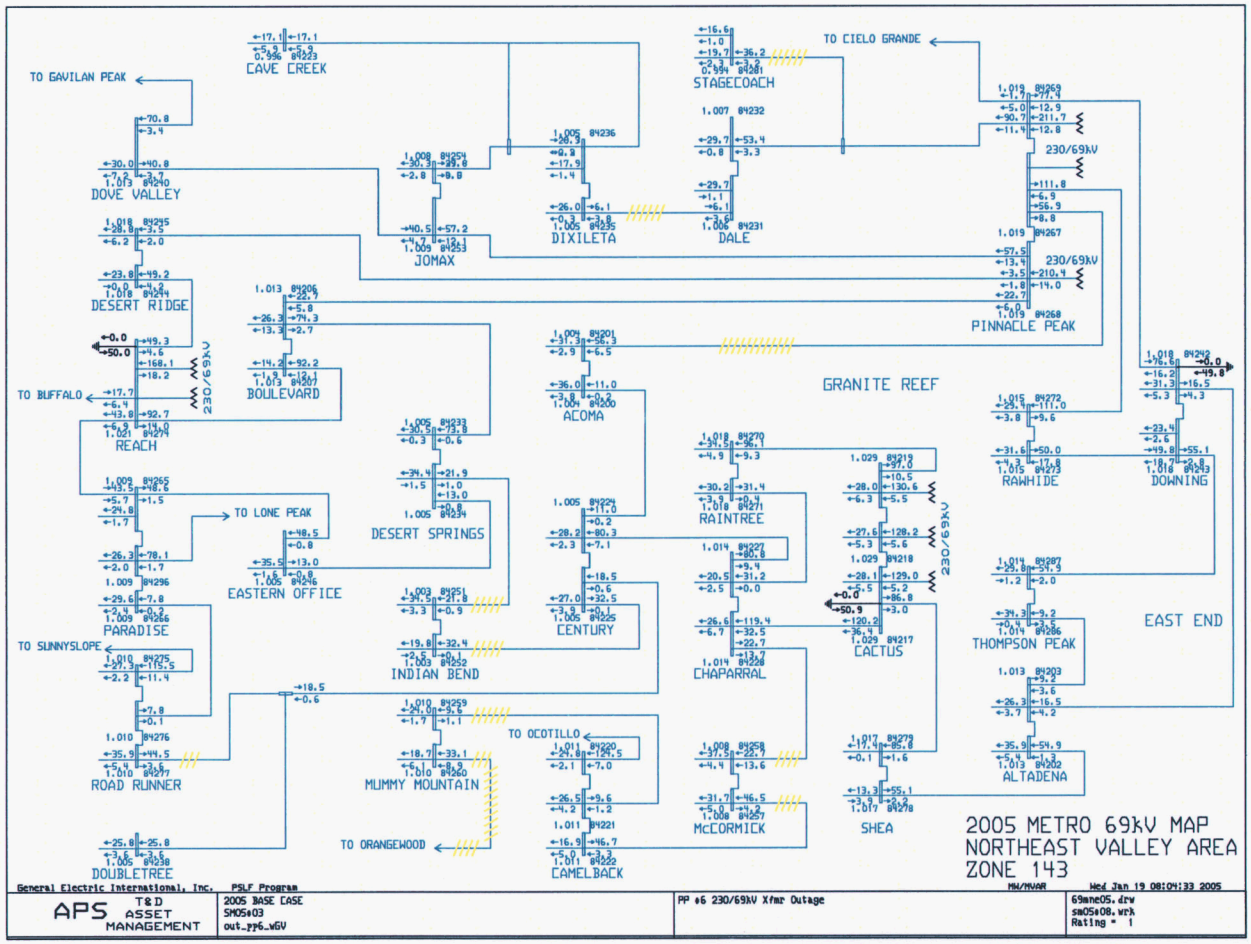
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CAVE CREEK
TO CIELO GRANDE
STAGECOACH
DOVE VALLEY
DIXILETA
DALE
JOMAX
230/69kV
DESERT RIDGE
PINNACLE PEAK
BOULEVARD
TO BUFFALO
REACH
ACOMA
GRANITE REEF
RAWHIDE
DOWNING
TO LONE PEAK
EASTERN OFFICE
DESERT SPRINGS
RAINTREE
CACTUS
EAST END
PARADISE
CENTURY
THOMPSON PEAK
TO SUNNYSLOPE
INDIAN BEND
CHAPARRAL
ROAD RUNNER
TO OCOTILLO
MUMMY MOUNTAIN
ALTADENA
TO ORANGEWOOD
McCORMICK
SHEA
DOUBLETREE
CAMELBACK
2005 METRO 69kV MAP
NORTHEAST VALLEY AREA
ZONE 143
General Electric International, Inc.
PSLF Program
MW/MVAR
Wed Jan 19 08:04:33 2005
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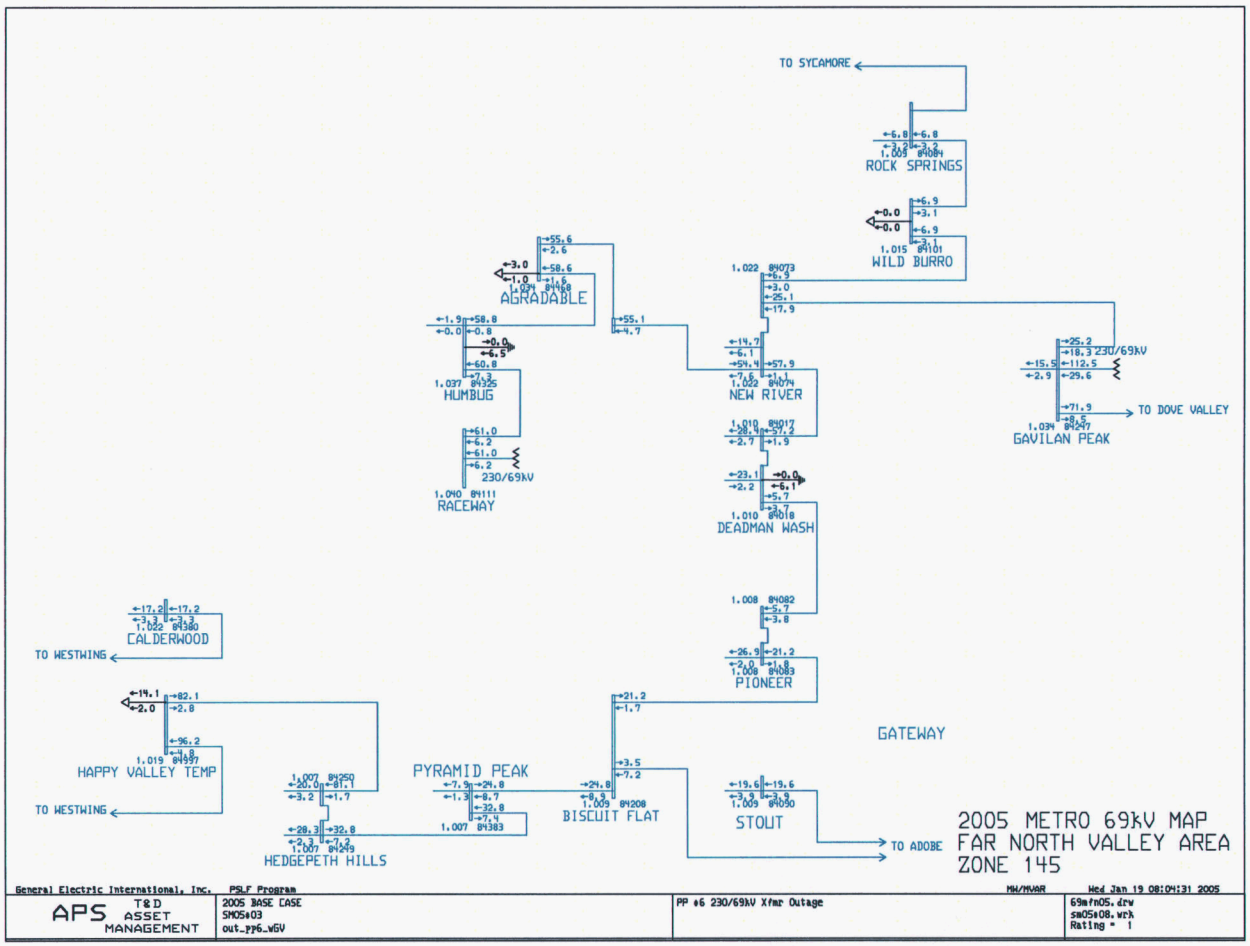
TO SYCAMORE
ROCK SPRINGS
WILD BURRO
AGRADABLE
HUMBUG
RACEWAY
230/69kV
NEW RIVER
DEADMAN WASH
PIONEER
GAVILAN PEAK
TO DOVE VALLEY
GATEWAY
CALDERWOOD
TO WESTWING
HAPPY VALLEY TEMP
TO WESTWING
HEDGEPETH HILLS
PYRAMID PEAK
BISCUIT FLAT
STOUT
TO ADOBE
2005 METRO 69kV MAP
FAR NORTH VALLEY AREA
ZONE 145
General Electric International, Inc.
PSLF Program
MW/MVAR
Wed Jan 19 08:04:31 2005
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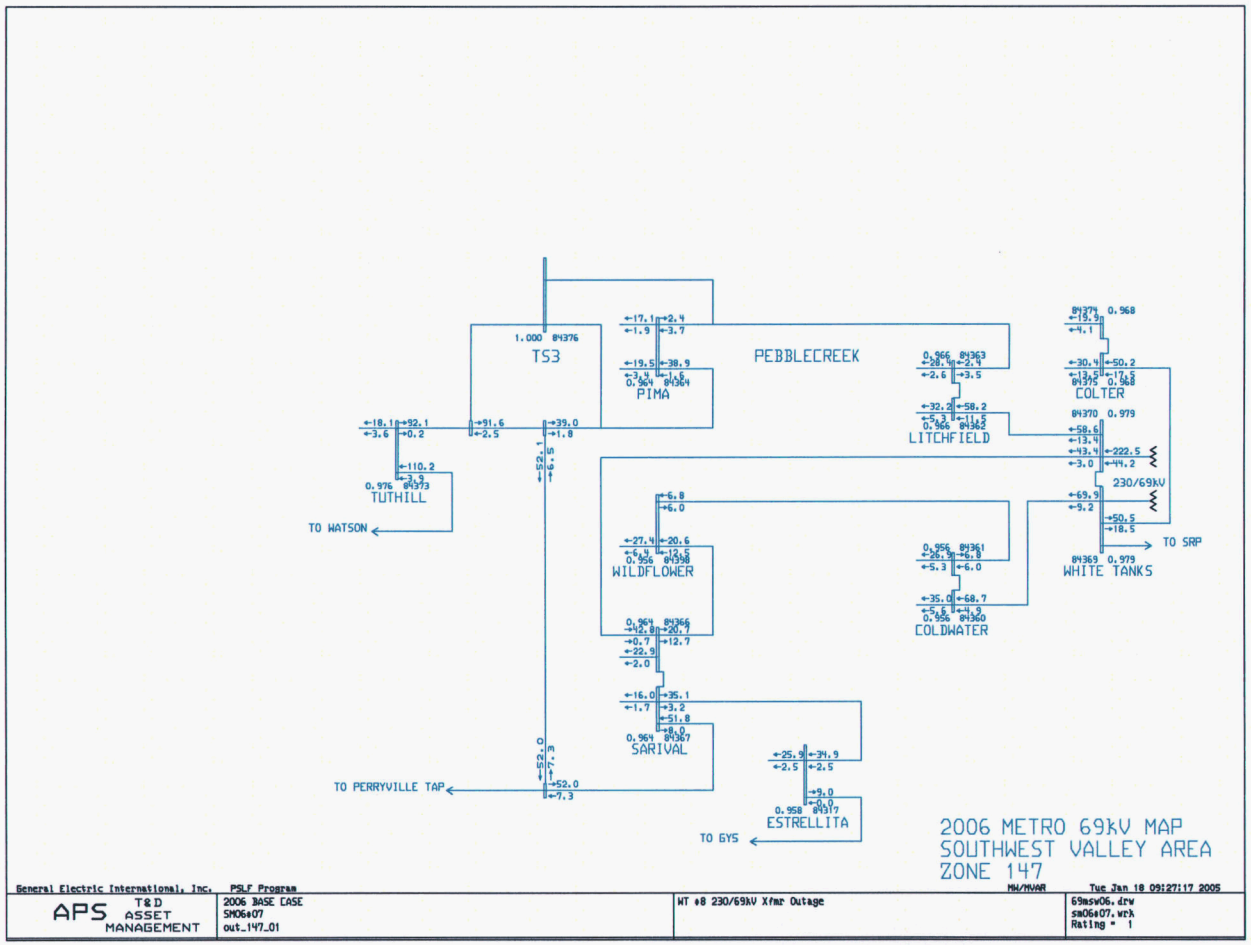
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PIMA
LITCHFIELD
COLTER
TUTHILL
TO WATSON
WILDFLOWER
COLDWATER
WHITE TANKS
230/69kV
TO SRP
SARIVAL
TO PERRYVILLE TAP
ESTRELLITA
TO GYS
2006 METRO 69kV MAP
SOUTHWEST VALLEY AREA
ZONE 147
MW/MVAR
General Electric International, Inc. PSLF Program
Tue Jan 18 09:27:17 2005
APS T&D ASSET MANAGEMENT
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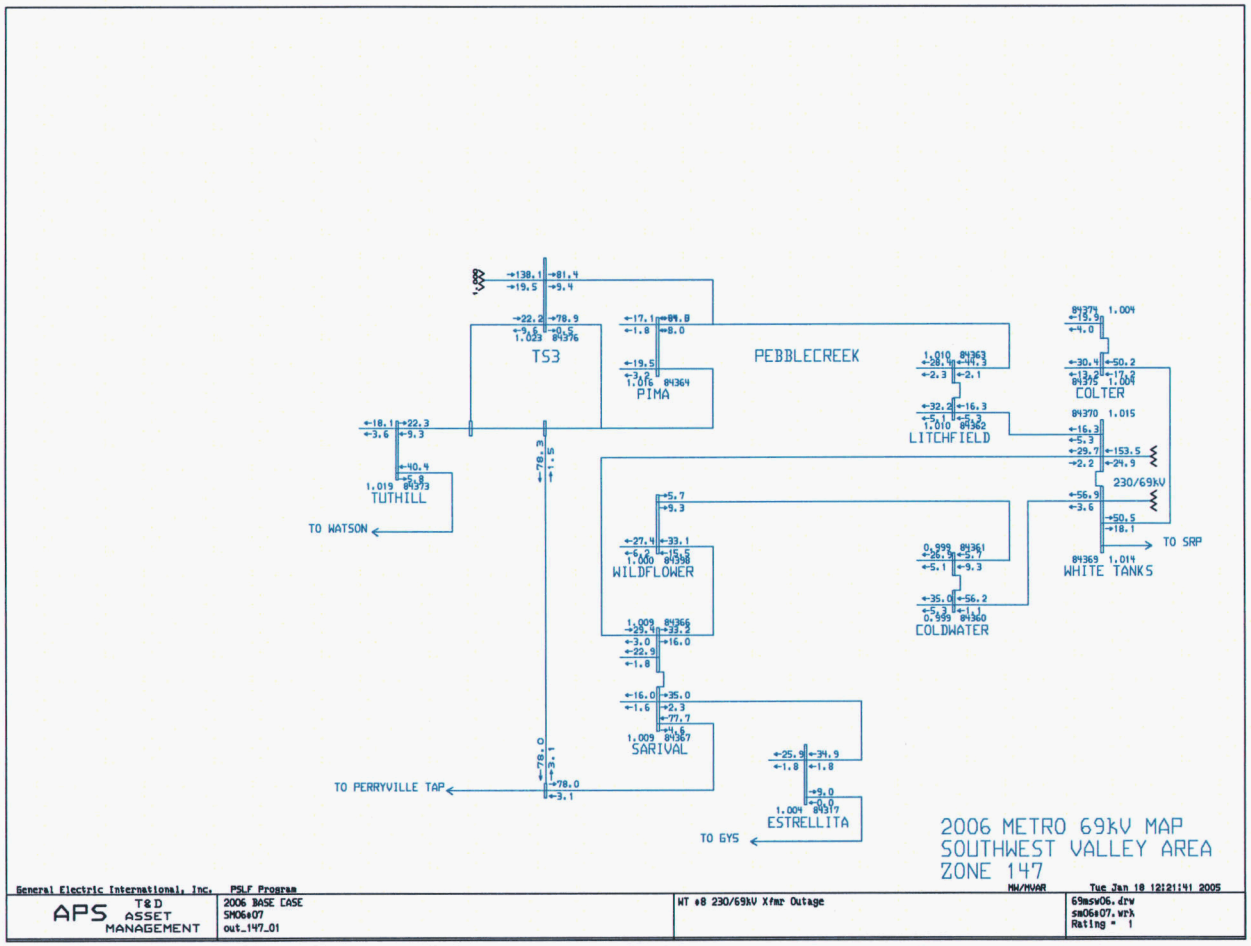
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PIMA
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COLTER
TUTHILL
TO WATSON
WILDFLOWER
COLDWATER
WHITE TANKS
230/69kV
TO SRP
SARIVAL
TO PERRYVILLE TAP
ESTRELLITA
TO GYS
2006 METRO 69kV MAP
SOUTHWEST VALLEY AREA
ZONE 147
General Electric International, Inc.
PSLF Program
APS T&D ASSET MANAGEMENT
2006 BASE CASE
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MW/MVAR
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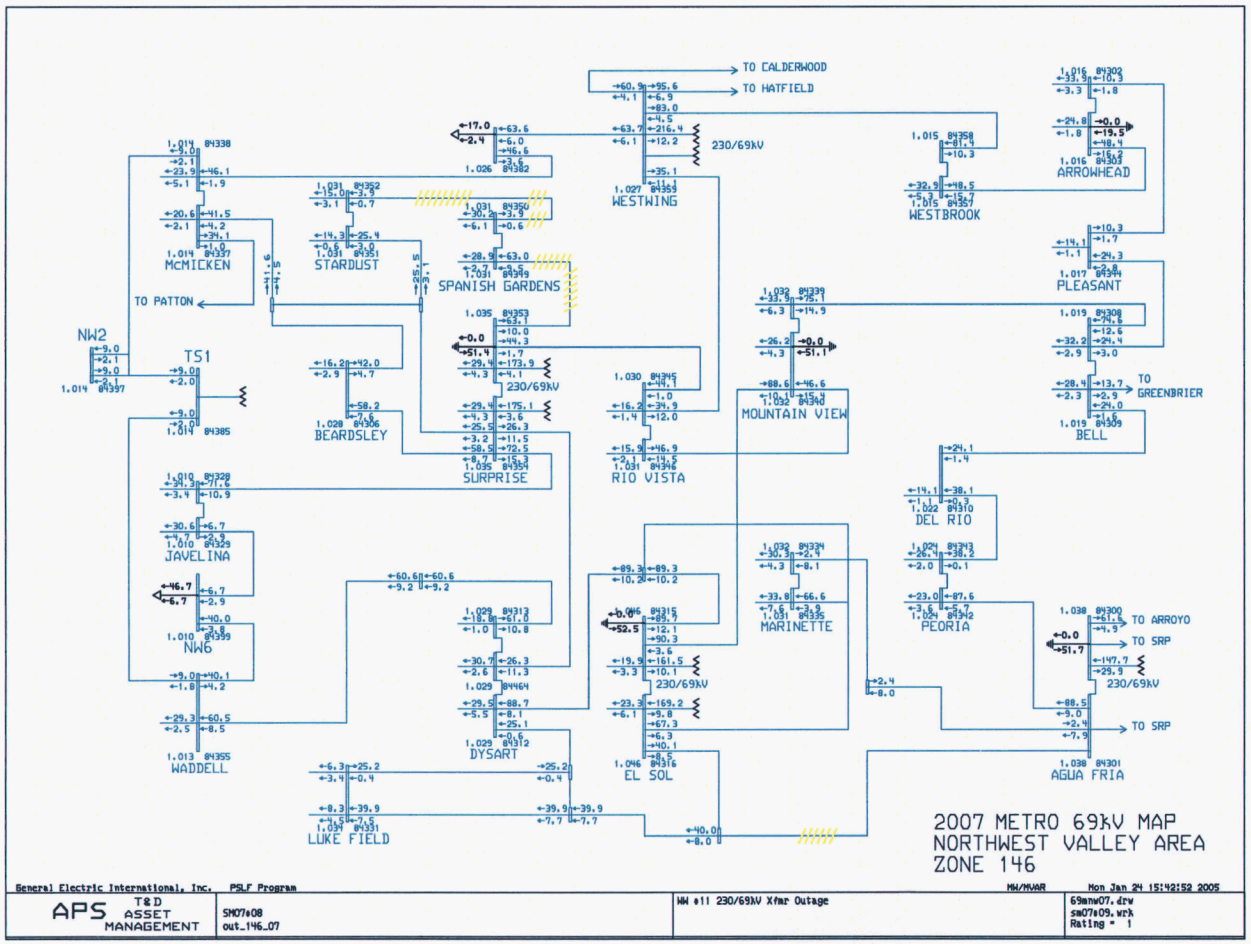
TO CALDERWOOD
TO HATFIELD
230/69kV
WESTWING
WESTBROOK
ARROWHEAD
PLEASANT
BELL
TO GREENBRIER
MCMICKEN
TO PATTON
STARDUST
SPANISH GARDENS
NW2
TS1
BEARDSLEY
SURPRISE
RIO VISTA
MOUNTAIN VIEW
DEL RIO
JAVELINA
NW6
MARINETTE
PEORIA
TO ARROYO
TO SRP
TO SRP
WADDELL
DYSART
EL SOL
AGUA FRIA
LUKE FIELD
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc. PSLF Program
MW/MVAR
Mon Jan 24 15:42:52 2005
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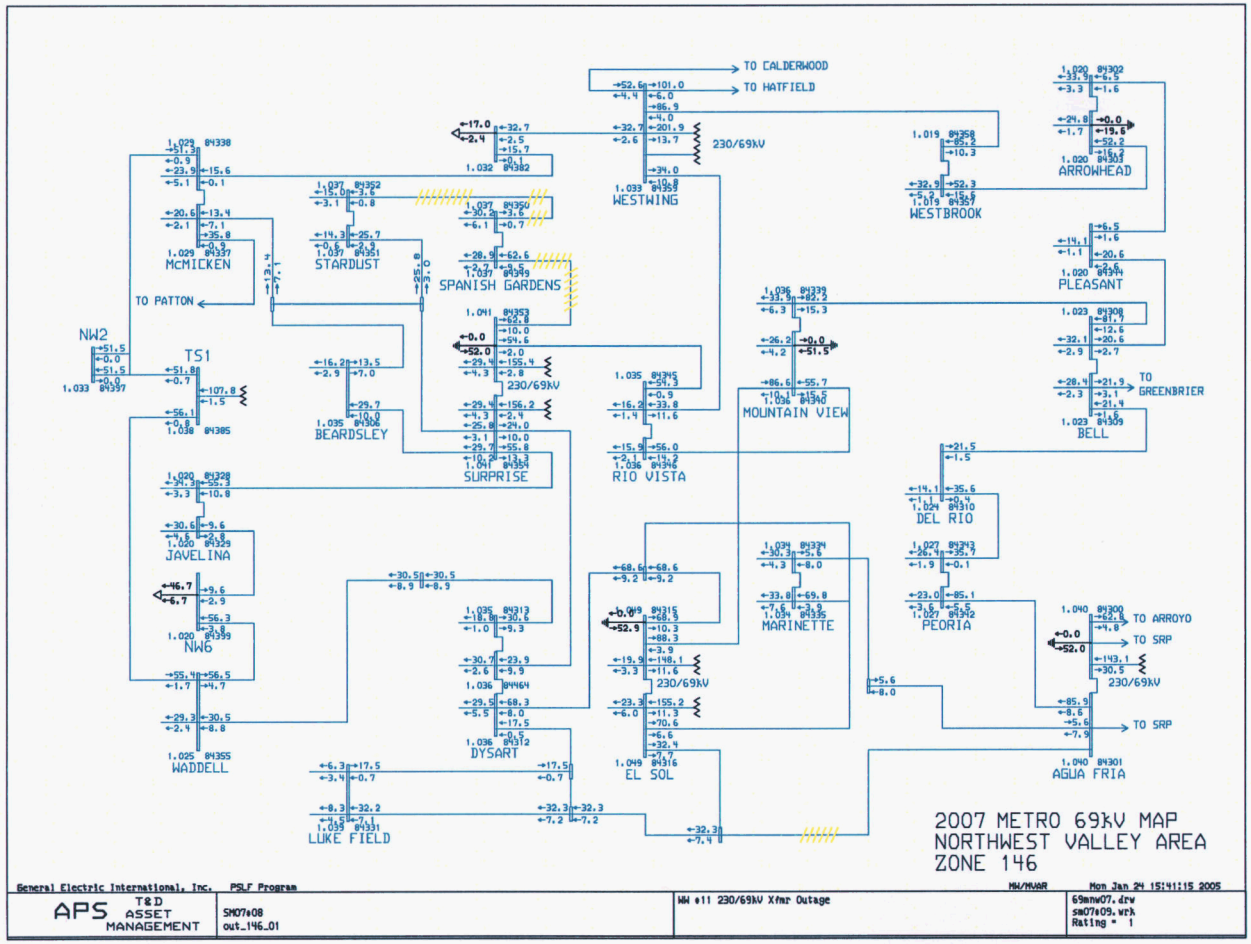
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WESTBROOK
ARROWHEAD
PLEASANT
TO GREENBRIER
BELL
MOUNTAIN VIEW
RIO VISTA
SPANISH GARDENS
STARDUST
McMICKEN
TO PATTON
NW2
TS1
BEARDSLEY
SURPRISE
JAVELINA
NW6
WADDELL
DYSART
LUKE FIELD
EL SOL
MARINETTE
DEL RIO
PEORIA
AGUA FRIA
TO ARROYO
TO SRP
TO SRP
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:41:15 2005
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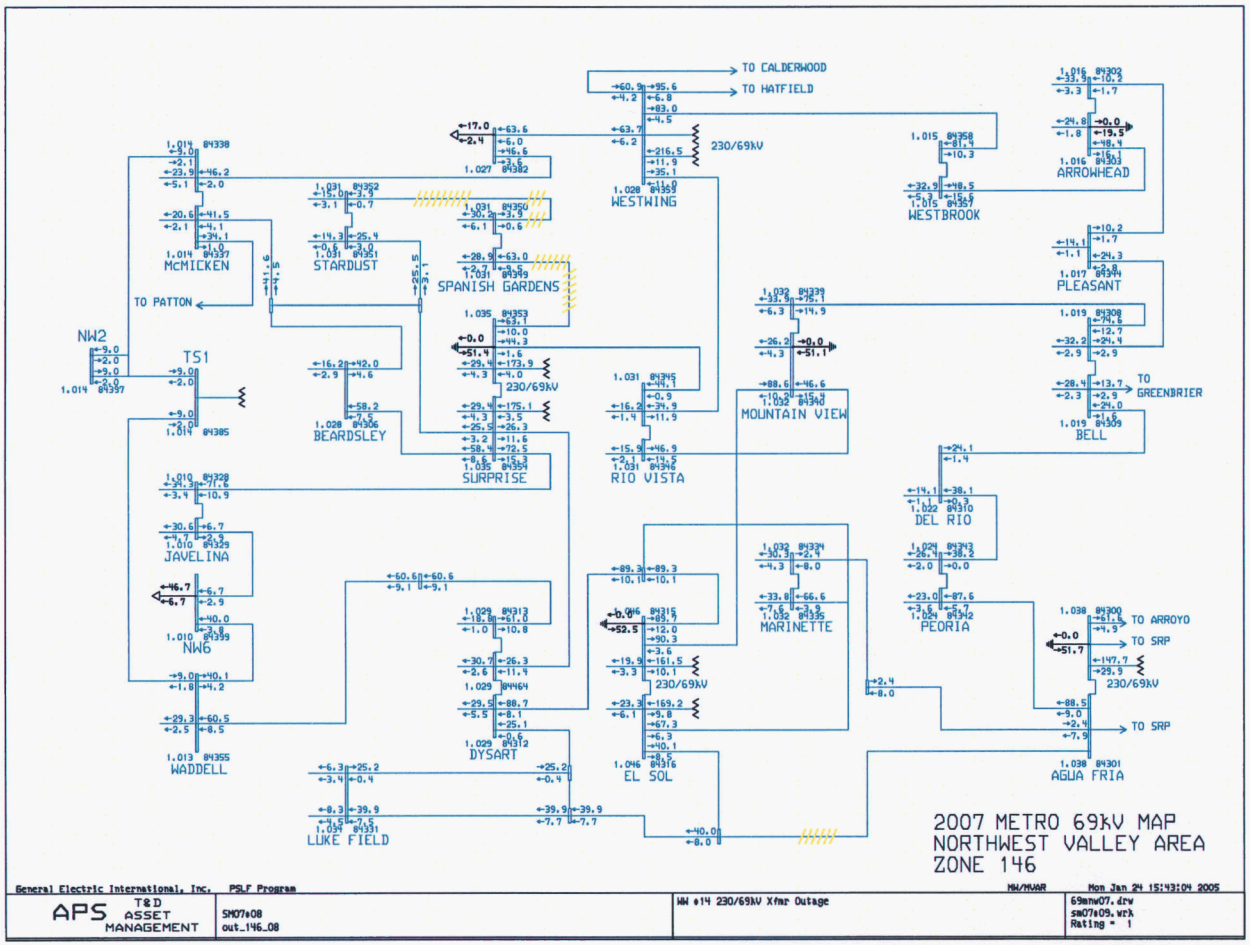
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WESTBROOK
ARROWHEAD
McMICKEN
TO PATTON
STARDUST
SPANISH GARDENS
PLEASANT
NW2
TS1
BEARDSLEY
MOUNTAIN VIEW
TO GREENBRIER
BELL
SURPRISE
RIO VISTA
DEL RIO
JAVELINA
NW6
MARINETTE
PEORIA
TO ARROYO
TO SRP
TO SRP
DYSART
EL SOL
AGUA FRIA
WADDELL
LUKE FIELD
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:43:04 2005
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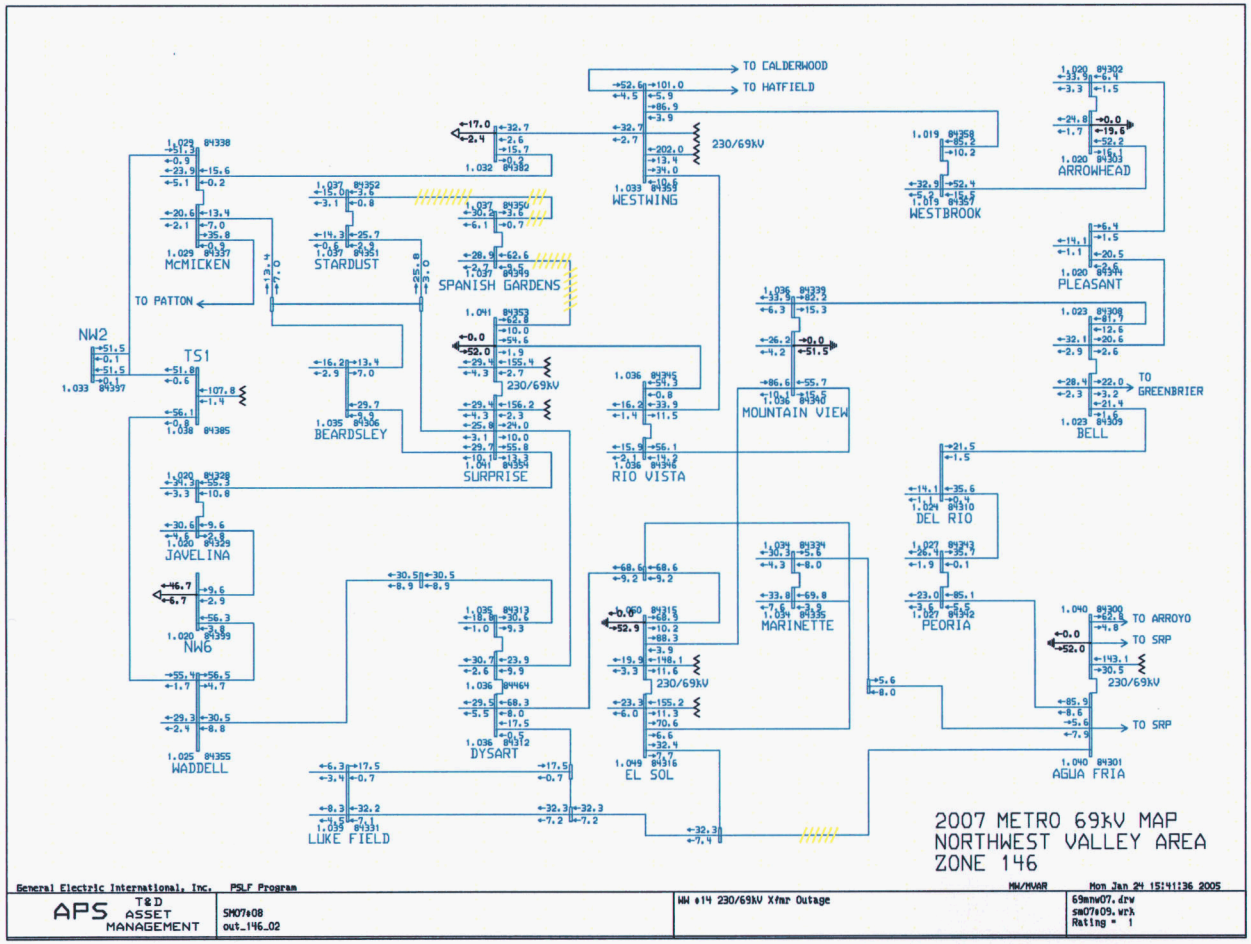
TO CALDERWOOD
TO HATFIELD
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WESTBROOK
ARROWHEAD
PLEASANT
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BELL
MOUNTAIN VIEW
RIO VISTA
DEL RIO
PEORIA
MARINETTE
TO ARROYO
TO SRP
TO SRP
AGUA FRIA
SPANISH GARDENS
McMICKEN
TO PATTON
STARDUST
BEARDSLEY
SURPRISE
JAVELINA
NW6
WADDELL
DYSART
EL SOL
LUKE FIELD
NW2
TS1
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:41:36 2005
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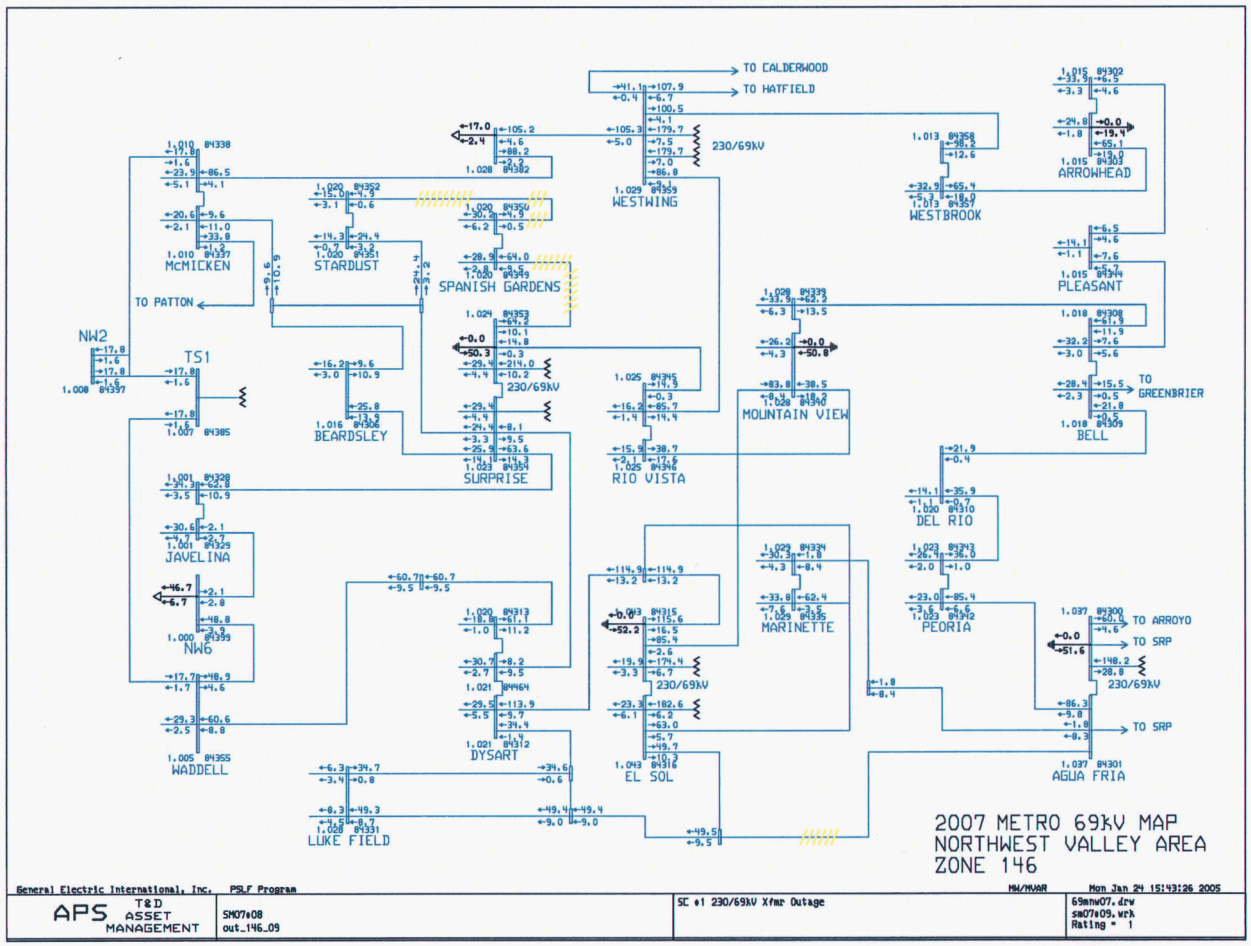
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WESTBROOK
ARROWHEAD
PLEASANT
BELL
TO GREENBRIER
MOUNTAIN VIEW
DEL RIO
PEORIA
MARINETTE
TO ARROYO
TO SRP
TO SRP
AGUA FRIA
EL SOL
RIO VISTA
SURPRISE
SPANISH GARDENS
STARDUST
McMICKEN
TO PATTON
NW2
TS1
BEARDSLEY
JAVELINA
NW6
WADDELL
DYSART
LUKE FIELD
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:43:26 2005
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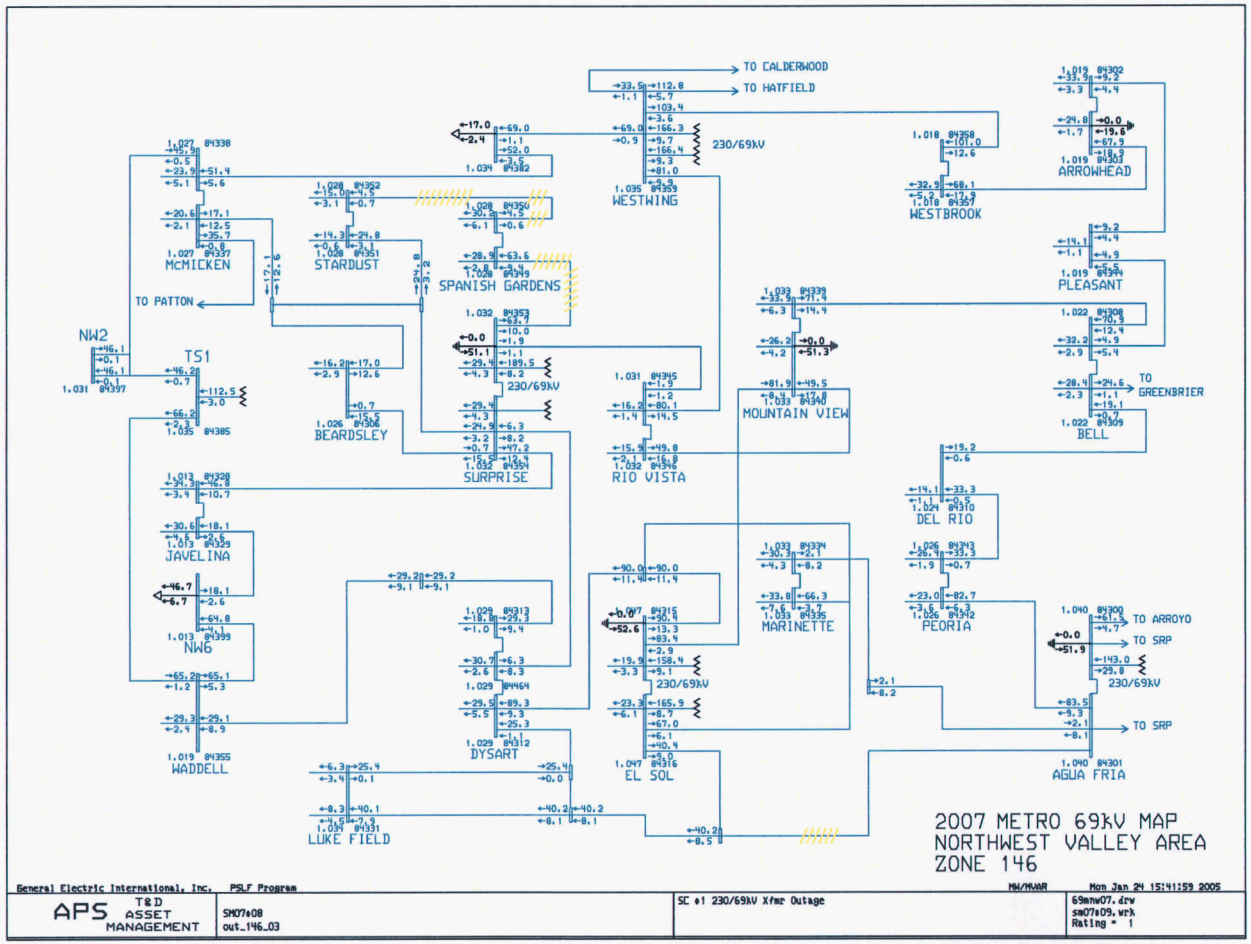
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WESTBROOK
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MOUNTAIN VIEW
RIO VISTA
SURPRISE
SPANISH GARDENS
STARDUST
BEARDSLEY
McMICKEN
TO PATTON
NW2
TS1
JAVELINA
NW6
WADDELL
LUKE FIELD
DYSART
EL SOL
MARINETTE
DEL RIO
PEORIA
AGUA FRIA
TO ARROYO
TO SRP
TO SRP
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:41:59 2005
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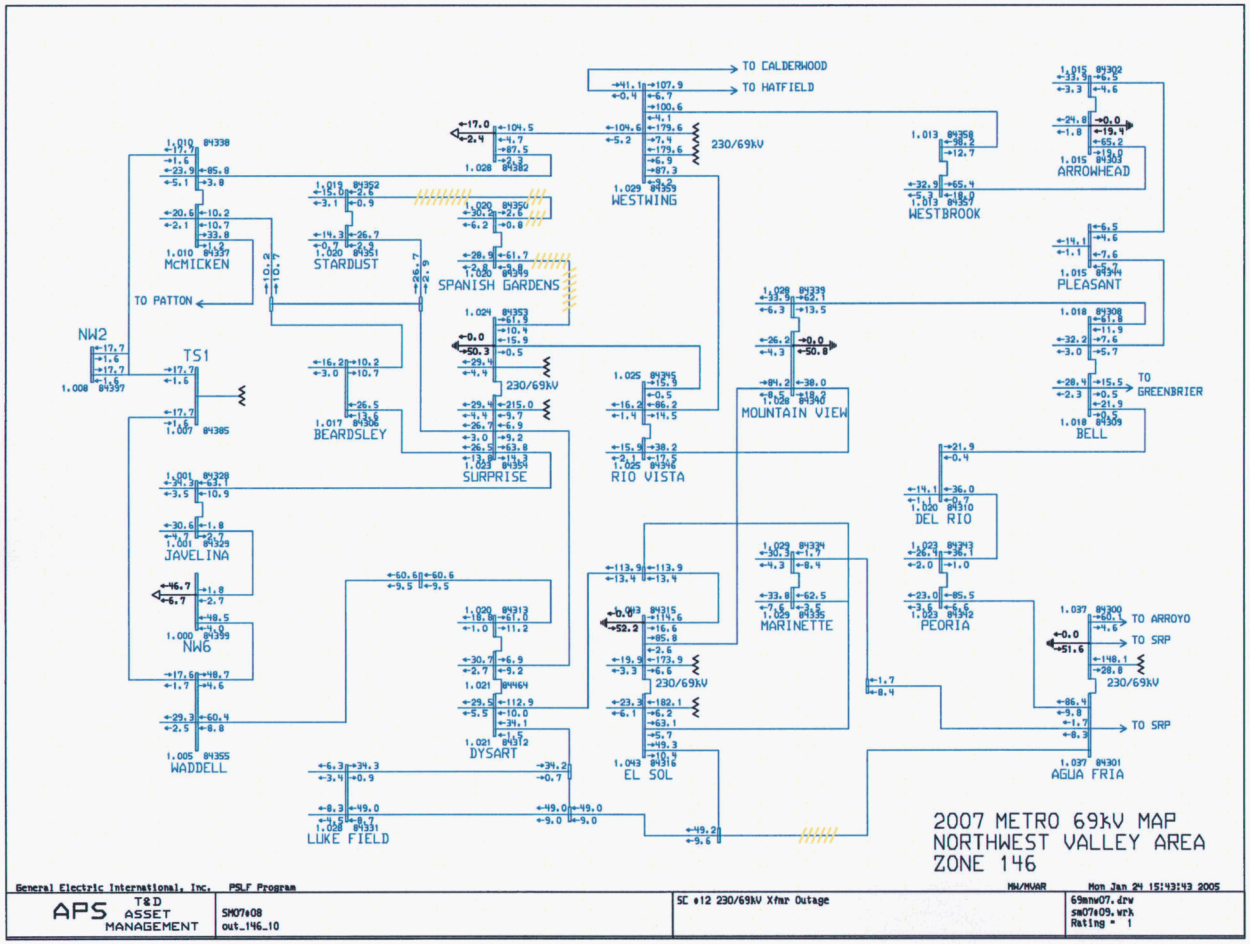
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SPANISH GARDENS
STARDUST
McMICKEN
TO PATTON
NW2
TS1
BEARDSLEY
SURPRISE
RIO VISTA
DEL RIO
PEORIA
TO ARROYO
TO SRP
TO SRP
AGUA FRIA
MARINETTE
JAVELINA
NW6
WADDELL
DYSART
EL SOL
LUKE FIELD
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:43:43 2005
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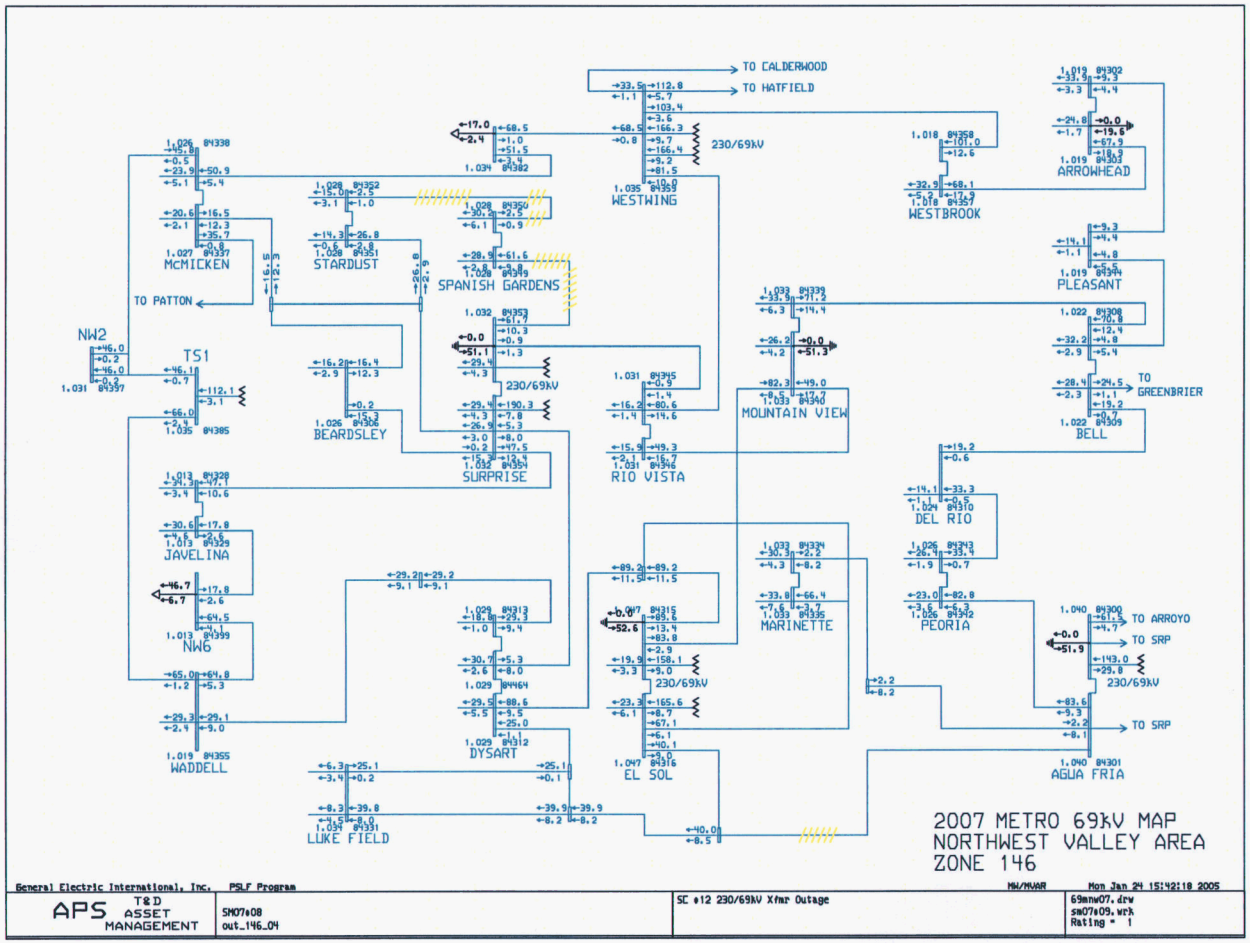
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NW2
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BEARDSLEY
MOUNTAIN VIEW
TO GREENBRIER
BELL
SURPRISE
RIO VISTA
DEL RIO
JAVELINA
NW6
MARINETTE
PEORIA
TO ARROYO
TO SRP
TO SRP
DYSART
EL SOL
AGUA FRIA
WADDELL
LUKE FIELD
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
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General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:42:10 2005
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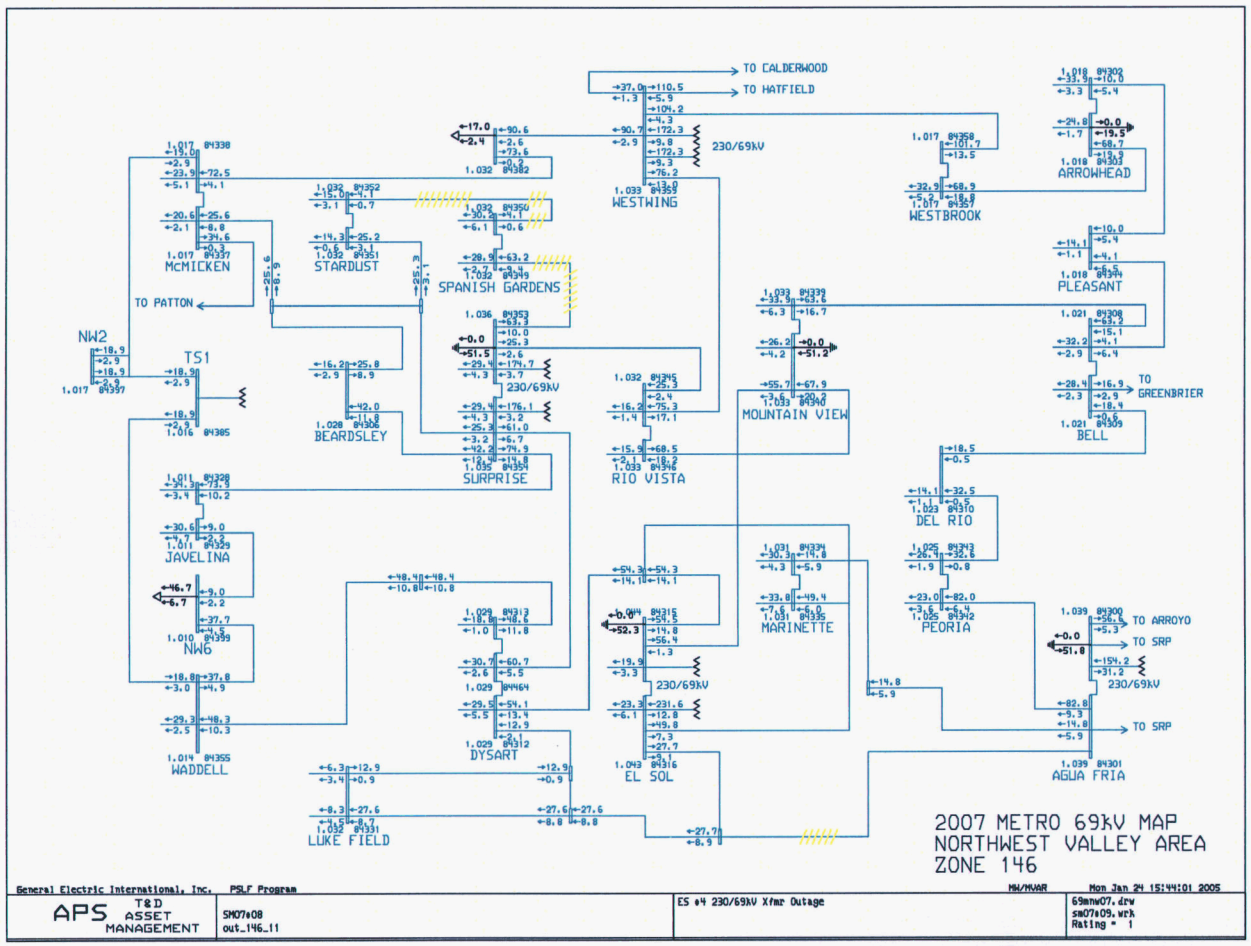
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WESTWING
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RIO VISTA
DEL RIO
PEORIA
MARINETTE
TO ARROYO
TO SRP
TO SRP
AGUA FRIA
EL SOL
DYSART
SURPRISE
SPANISH GARDENS
STARDUST
BEARDSLEY
McMICKEN
TO PATTON
NW2
TS1
JAVELINA
NW6
WADDELL
LUKE FIELD
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:44:01 2005
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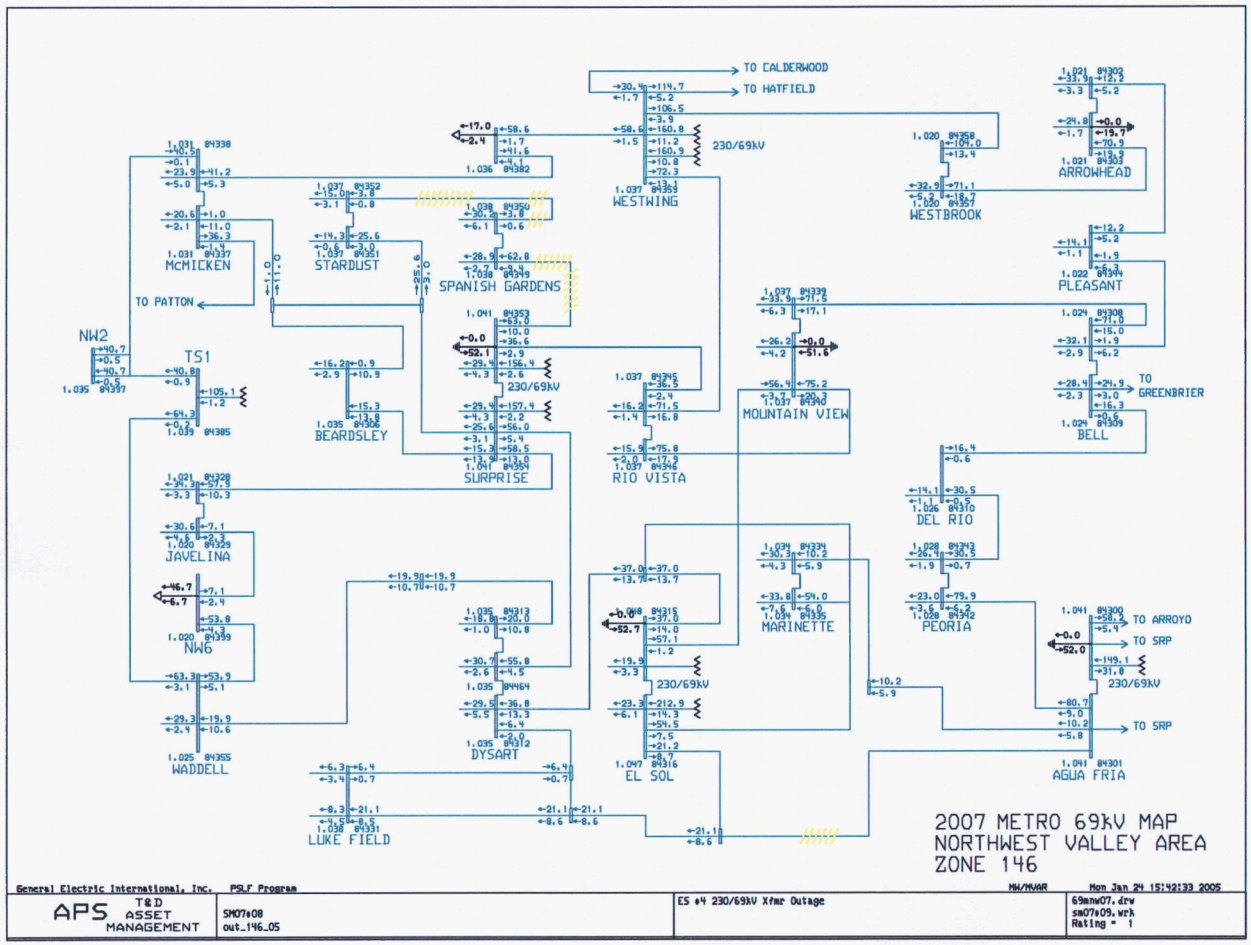
TO CALDERWOOD
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TO PATTON
NW2
TS1
BEARDSLEY
MOUNTAIN VIEW
TO GREENBRIER
BELL
SURPRISE
RIO VISTA
DEL RIO
JAVELINA
NW6
MARINETTE
PEORIA
TO ARROYO
TO SRP
TO SRP
DYSART
EL SOL
AGUA FRIA
WADDELL
LUKE FIELD
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:42:33 2005
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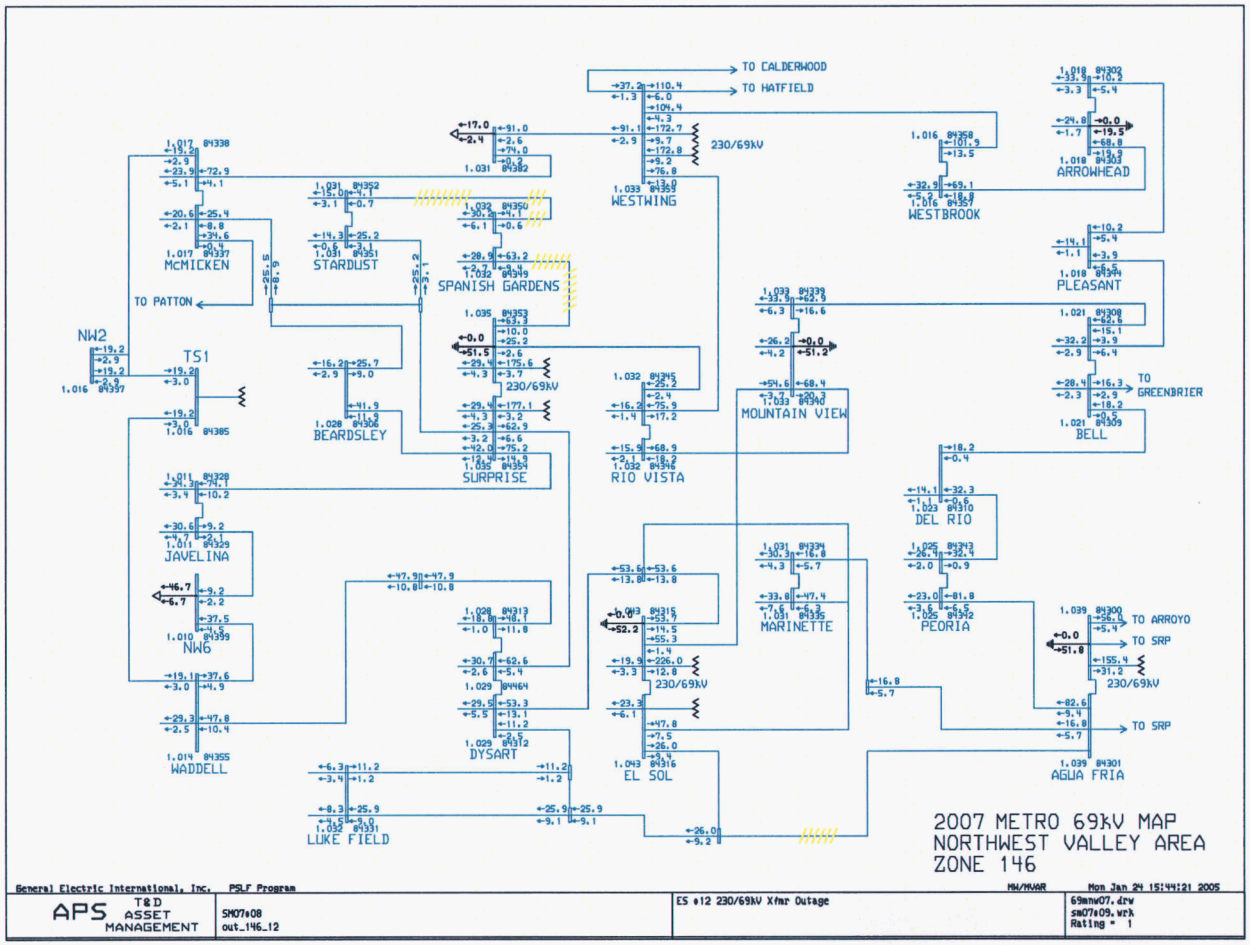
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SPANISH GARDENS
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TO PATTON
NW2
TS1
BEARDSLEY
230/69kV
MOUNTAIN VIEW
TO GREENBRIER
BELL
SURPRISE
RIO VISTA
DEL RIO
JAVELINA
MARINETTE
PEORIA
NW6
DYSART
230/69kV
TO ARROYO
TO SRP
TO SRP
WADDELL
EL SOL
AGUA FRIA
LUKE FIELD
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc. PSLF Program
MW/MVAR
Mon Jan 24 15:44:21 2005
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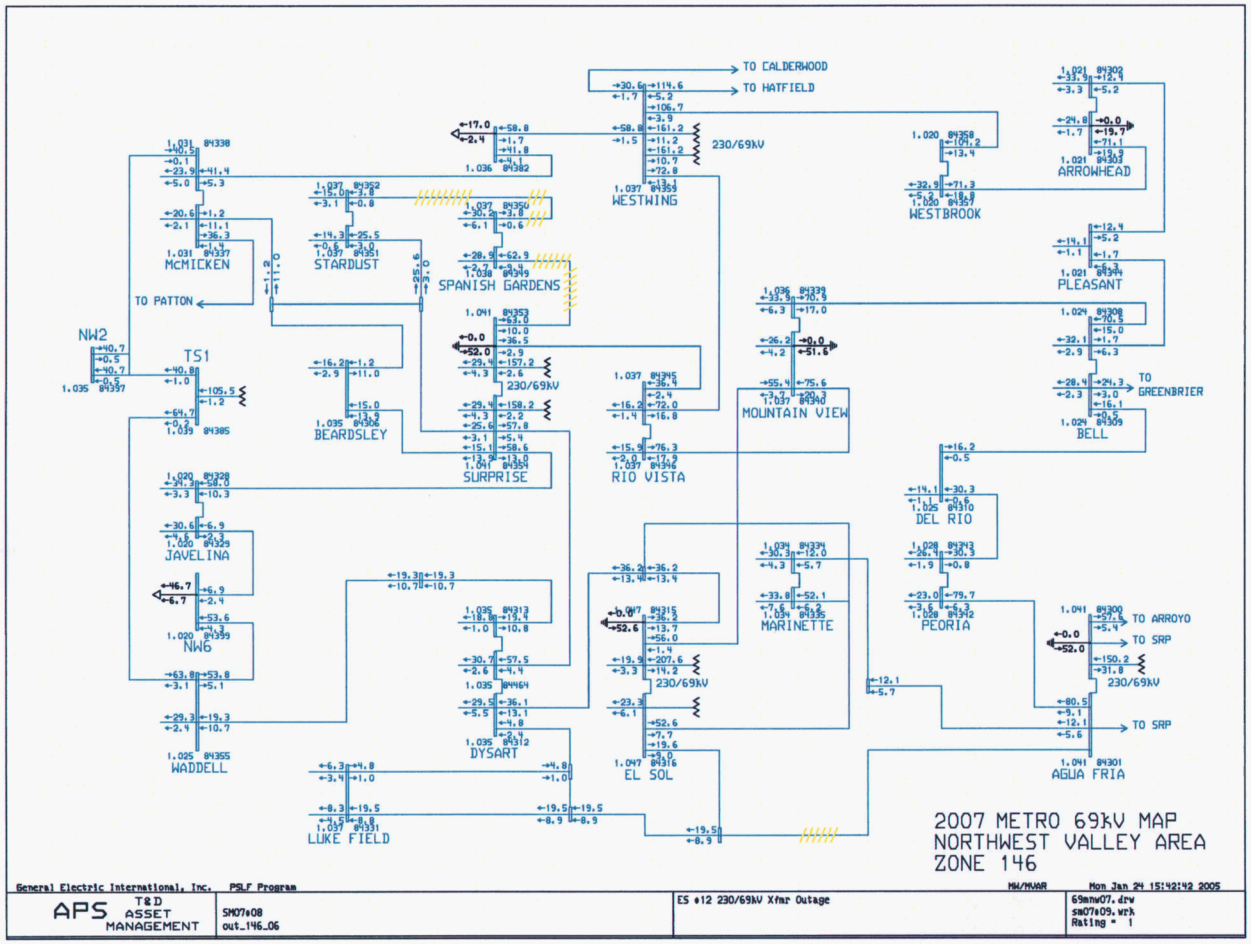
TO CALDERWOOD
TO HATFIELD
230/69kV
WESTWING
WESTBROOK
ARROWHEAD
PLEASANT
TO GREENBRIER
BELL
MOUNTAIN VIEW
RIO VISTA
DEL RIO
MARINETTE
PEORIA
TO ARROYO
TO SRP
TO SRP
AGUA FRIA
McMICKEN
TO PATTON
STARDUST
SPANISH GARDENS
NW2
TS1
BEARDSLEY
SURPRISE
JAVELINA
NW6
WADDELL
DYSART
LUKE FIELD
EL SOL
2007 METRO 69kV MAP
NORTHWEST VALLEY AREA
ZONE 146
General Electric International, Inc.
PSLF Program
MW/MVAR
Mon Jan 24 15:42:42 2005
APS T&D ASSET MANAGEMENT
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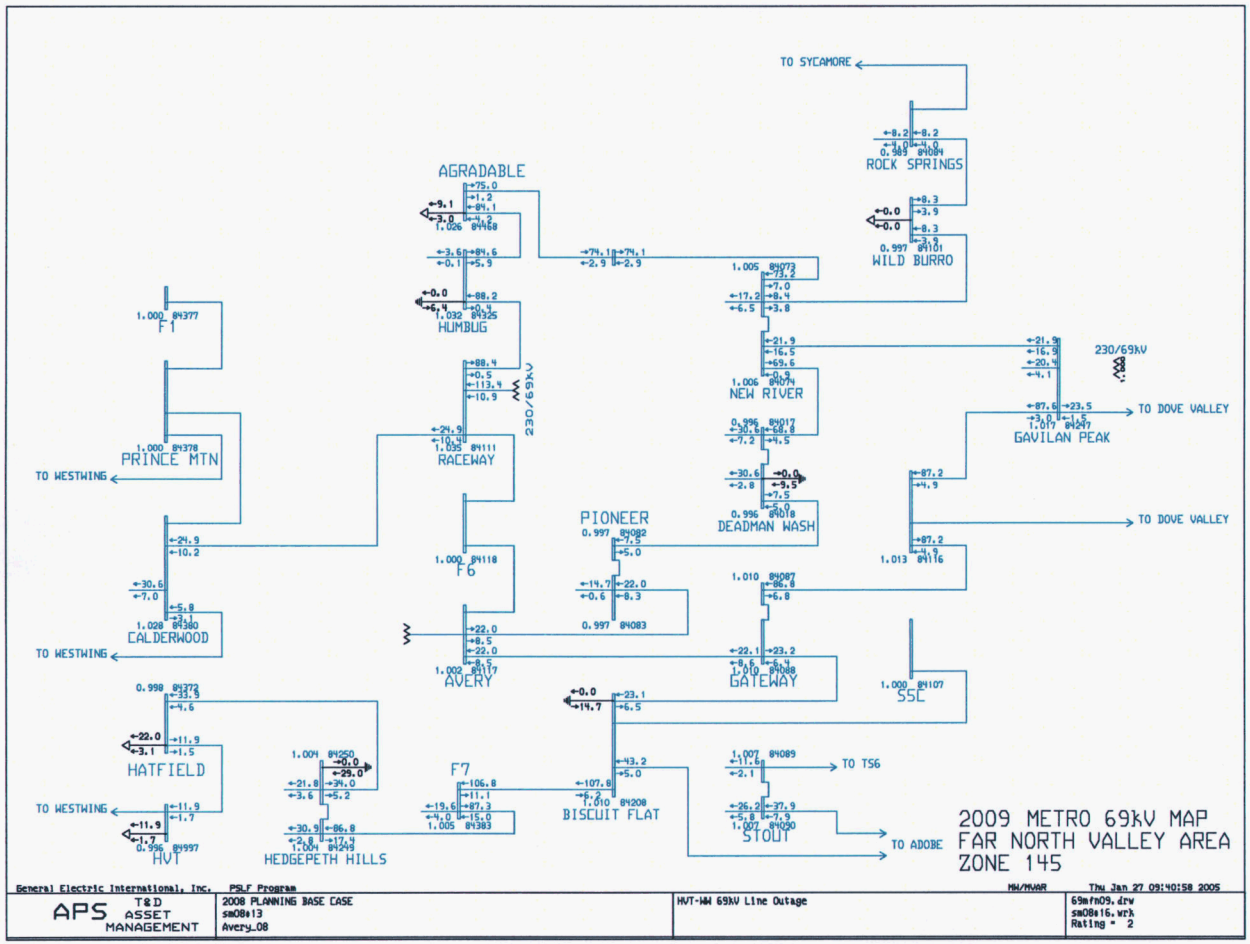
TO SYCAMORE
ROCK SPRINGS
WILD BURRO
AGRADABLE
HUMBUG
F1
PRINCE MTN
TO WESTWING
RACEWAY
230/69kV
NEW RIVER
230/69kV
GAVILAN PEAK
TO DOVE VALLEY
TO DOVE VALLEY
DEADMAN WASH
PIONEER
F6
CALDERWOOD
TO WESTWING
AVERY
GATEWAY
S5L
HATFIELD
TO WESTWING
HVT
HEDGEPETH HILLS
F7
BISCUIT FLAT
TO TS6
STOUT
TO ADOBE
2009 METRO 69kV MAP
FAR NORTH VALLEY AREA
ZONE 145
General Electric International, Inc.
PSLF Program
MW/MVAR
Thu Jan 27 09:40:58 2005
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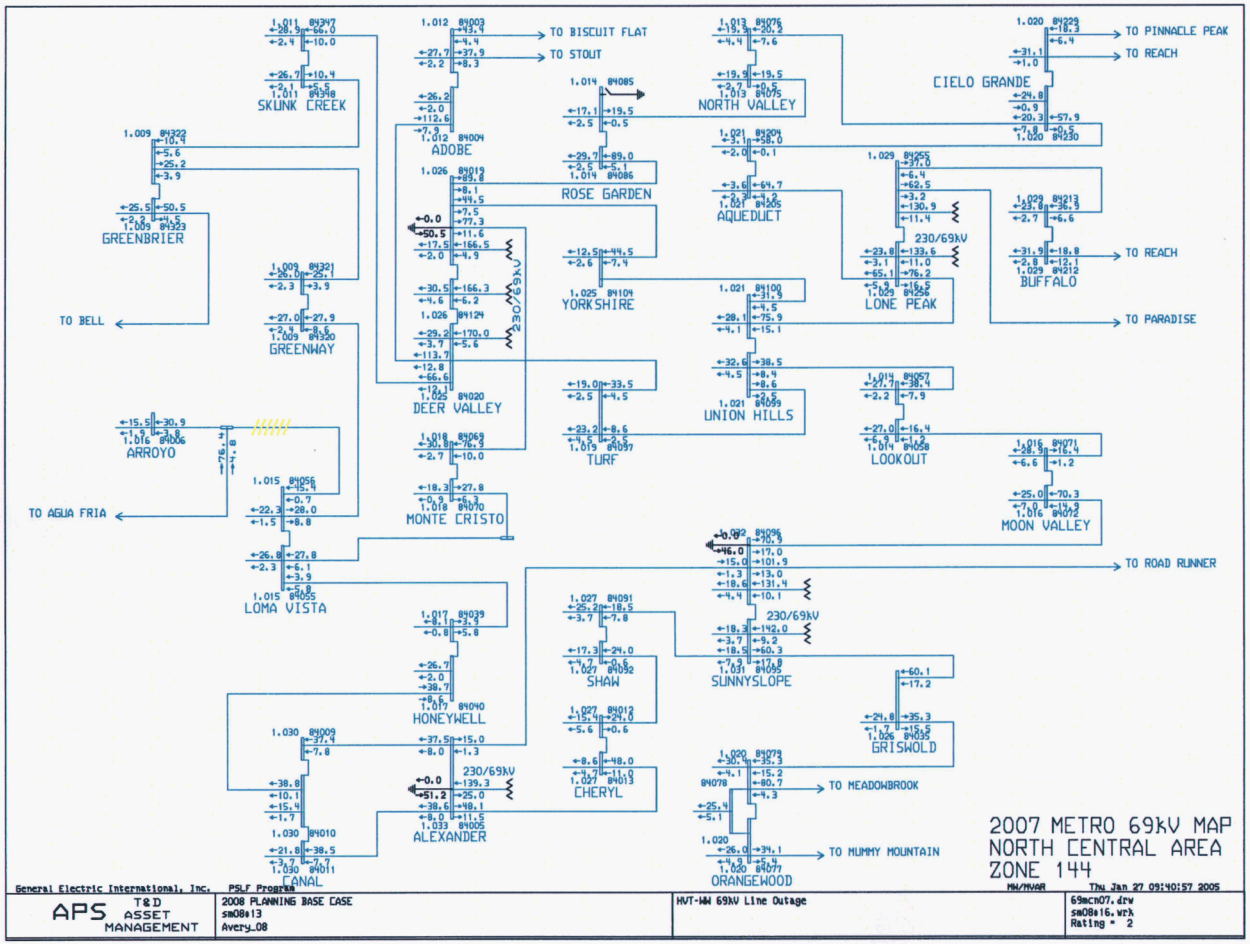
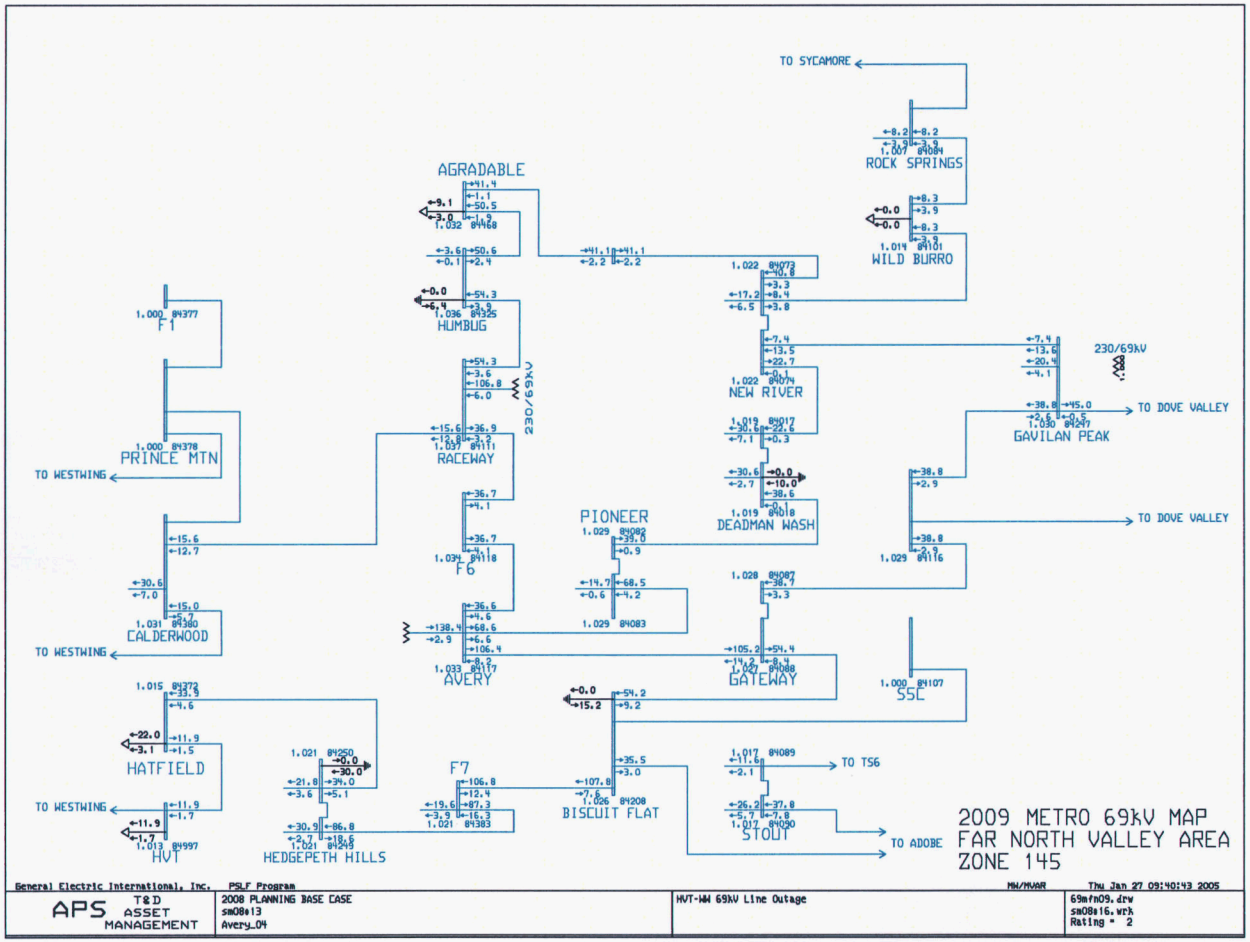
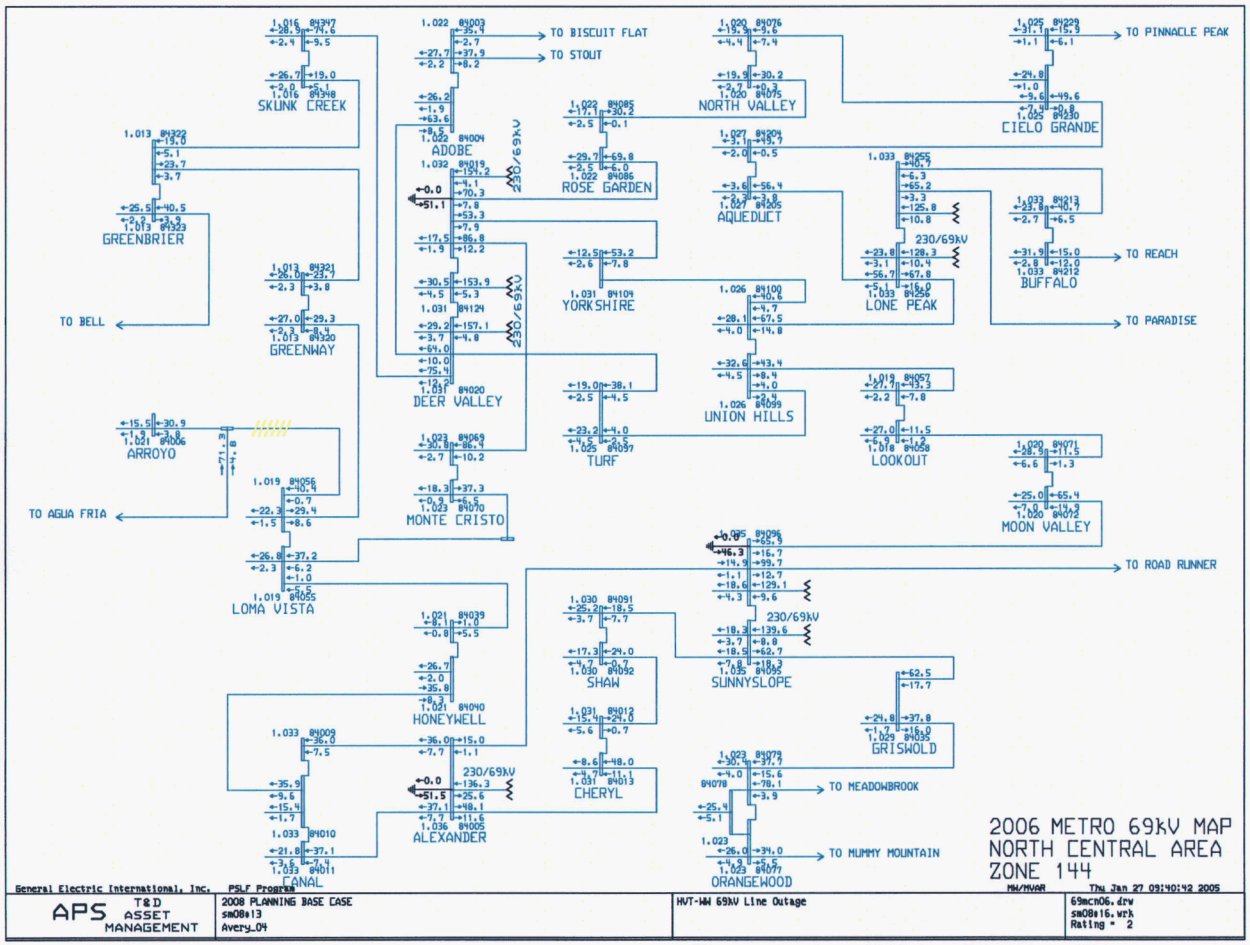
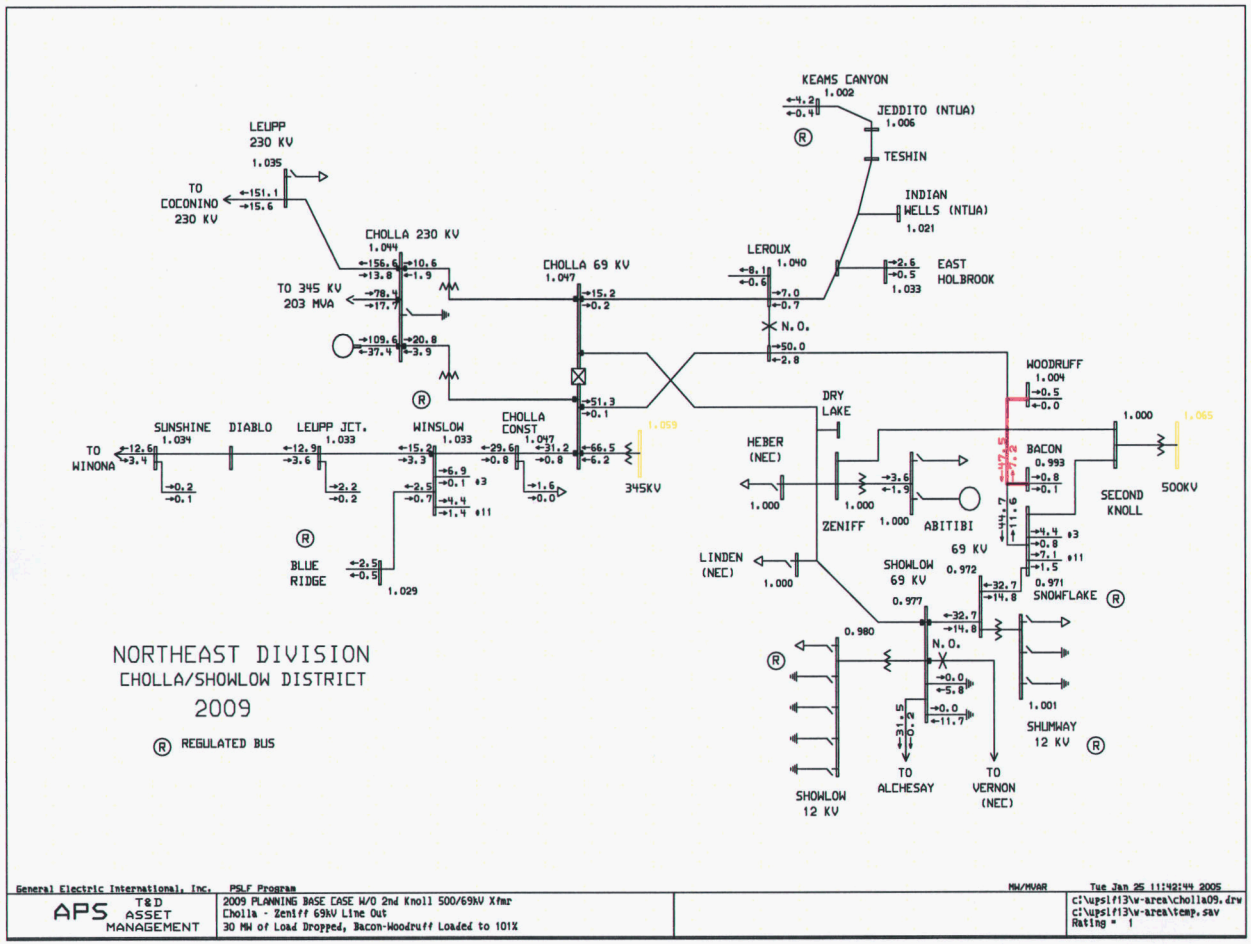

SKUNK CREEK
GREENBRIER
GREENWAY
TO BELL
ARROYO
TO AGUA FRIA
LOMA VISTA
CANAL
HONEYWELL
ALEXANDER
ADOBE
DEER VALLEY
MONTE CRISTO
TO BISCUIT FLAT
TO STOUT
ROSE GARDEN
YORKSHIRE
TURF
CHERYL
SHAW
ORANGEWOOD
TO MUMMY MOUNTAIN
TO MEADOWBROOK
SUNNYSLOPE
230/69kV
NORTH VALLEY
AQUEDUCT
UNION HILLS
TO ROAD RUNNER
CIELO GRANDE
TO PINNACLE PEAK
TO REACH
LONE PEAK
TO PARADISE
BUFFALO
LOOKOUT
MOON VALLEY
GRISWOLD
2007 METRO 69kV MAP
NORTH CENTRAL AREA
ZONE 144
General Electric International, Inc.
PSLF Program
MW/MVAR
Thu Jan 27 09:40:57 2005
APS T&D ASSET MANAGEMENT
2008 PLANNING BASE CASE
sm08i13
Avery_08
HVT-WW 69kV Line Outage
69mcn07.drw
sm08i16.wrk
Rating = 2


TO SYCAMORE
ROCK SPRINGS
WILD BURRO
AGRADABLE
HUMBUG
F1
PRINCE MTN
TO WESTWING
RACEWAY
230/69kV
NEW RIVER
230/69kV
GAVILAN PEAK
TO DOVE VALLEY
TO DOVE VALLEY
DEADMAN WASH
PIONEER
F6
CALDERWOOD
TO WESTWING
AVERY
GATEWAY
SSC
HATFIELD
TO WESTWING
HVT
HEDGEPETH HILLS
F7
BISCUIT FLAT
TO TS6
STOUT
TO ADOBE
2009 METRO 69kV MAP
FAR NORTH VALLEY AREA
ZONE 145
General Electric International, Inc.
PSLF Program
MW/MVAR
Thu Jan 27 09:40:43 2005
APS T&D ASSET MANAGEMENT
2008 PLANNING BASE CASE
sm08e13
Avery_04
HVT-WH 69kV Line Outage
69mn09.drw
sm08e16.wrk
Rating = 2


TO BISCUIT FLAT
TO STOUT
TO PINNACLE PEAK
TO REACH
TO PARADISE
TO ROAD RUNNER
TO MEADOWBROOK
TO MUMMY MOUNTAIN
TO BELL
TO AGUA FRIA
SKUNK CREEK
GREENBRIER
GREENWAY
ARROYO
LOMA VISTA
ADOBE
DEER VALLEY
MONTE CRISTO
ROSE GARDEN
YORKSHIRE
TURF
NORTH VALLEY
AQUEDUCT
UNION HILLS
SUNNYSLOPE
SHAW
CHERYL
HONEYWELL
ALEXANDER
CANAL
ORANGEWOOD
CIELO GRANDE
LONE PEAK
LOOKOUT
BUFFALO
MOON VALLEY
GRISWOLD
230/69kV
2006 METRO 69kV MAP
NORTH CENTRAL AREA
ZONE 144
General Electric International, Inc.
PSLF Program
MW/MVAR
Thu Jan 27 09:40:42 2005
APS T&D ASSET MANAGEMENT
2008 PLANNING BASE CASE
sm08s13
Avery_04
HVT-WW 69kV Line Outage
69mcn06.drw
sm08s16.wrk
Rating = 2


KEAMS CANYON
1.002
JEDDITO (NTUA)
1.006
TESHIN
INDIAN WELLS (NTUA)
1.021
LEUPP 230 KV
1.035
TO COCONINO 230 KV
CHOLLA 230 KV
1.044
CHOLLA 69 KV
1.047
LEROUX
1.040
EAST HOLBROOK
1.033
TO 345 KV 203 MVA
N.O.
WOODRUFF
1.004
DRY LAKE
SUNSHINE
1.034
DIABLO
LEUPP JCT.
1.033
WINSLOW
1.033
CHOLLA CONST
1.047
1.059
345KV
TO WINONA
HEBER (NEC)
1.000
ZENIFF
1.000
ABITIBI
1.000
BACON
0.993
1.000
1.065
500KV
SECOND KNOLL
69 KV
LINDEN (NEC)
1.000
SHOWLOW 69 KV
0.972
0.971
SNOWFLAKE
0.977
0.980
N.O.
1.001
SHUMWAY 12 KV
BLUE RIDGE
1.029
TO ALCHESAY
TO VERNON (NEC)
SHOWLOW 12 KV
NORTHEAST DIVISION
CHOLLA/SHOWLOW DISTRICT
2009
REGULATED BUS
General Electric International, Inc.
PSLF Program
MW/MVAR
Tue Jan 25 11:42:44 2005
APS T&D ASSET MANAGEMENT
2009 PLANNING BASE CASE W/O 2nd Knoll 500/69kV Xfmr
Cholla - Zeniff 69kV Line Out
30 MW of Load Dropped, Bacon-Woodruff Loaded to 101%
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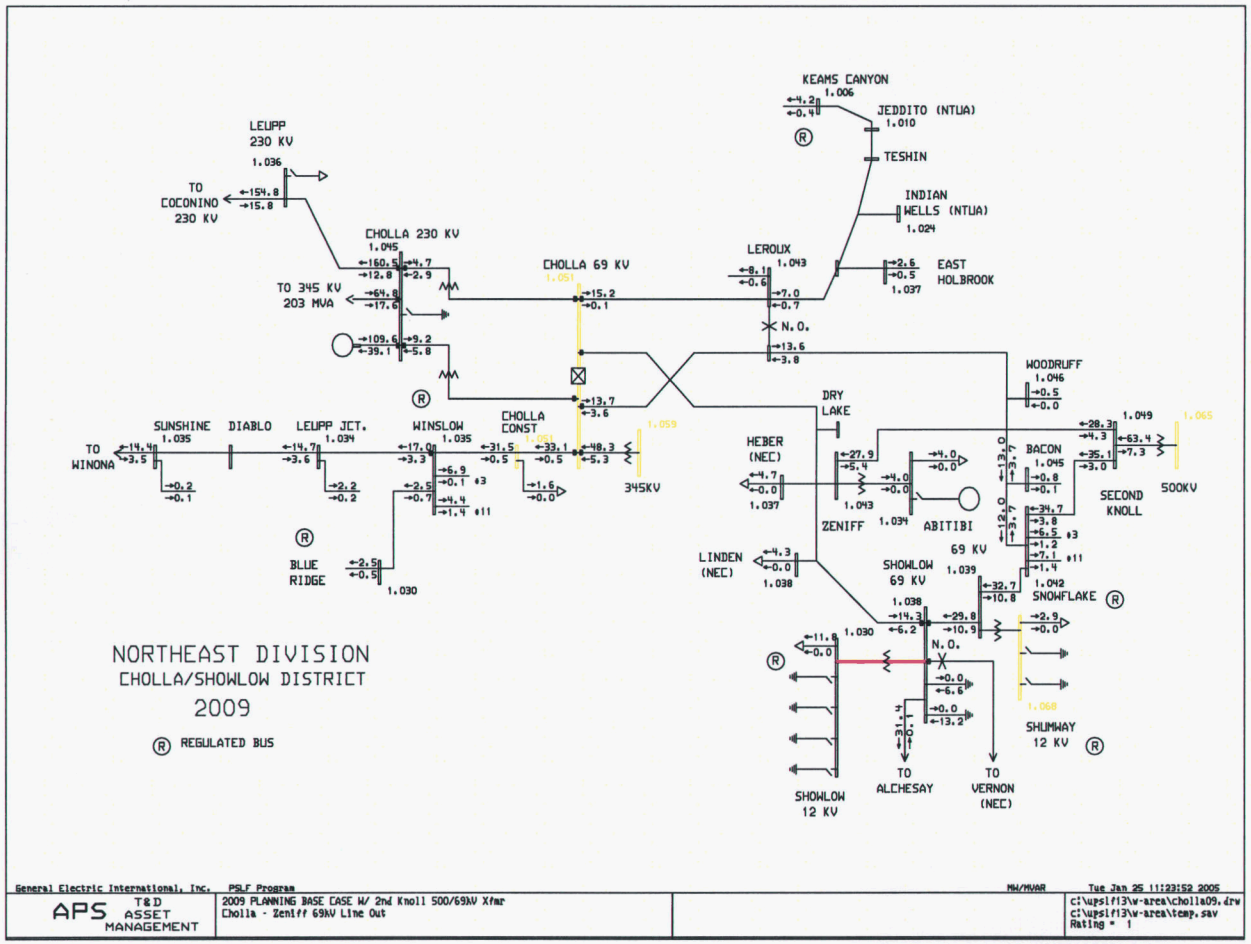
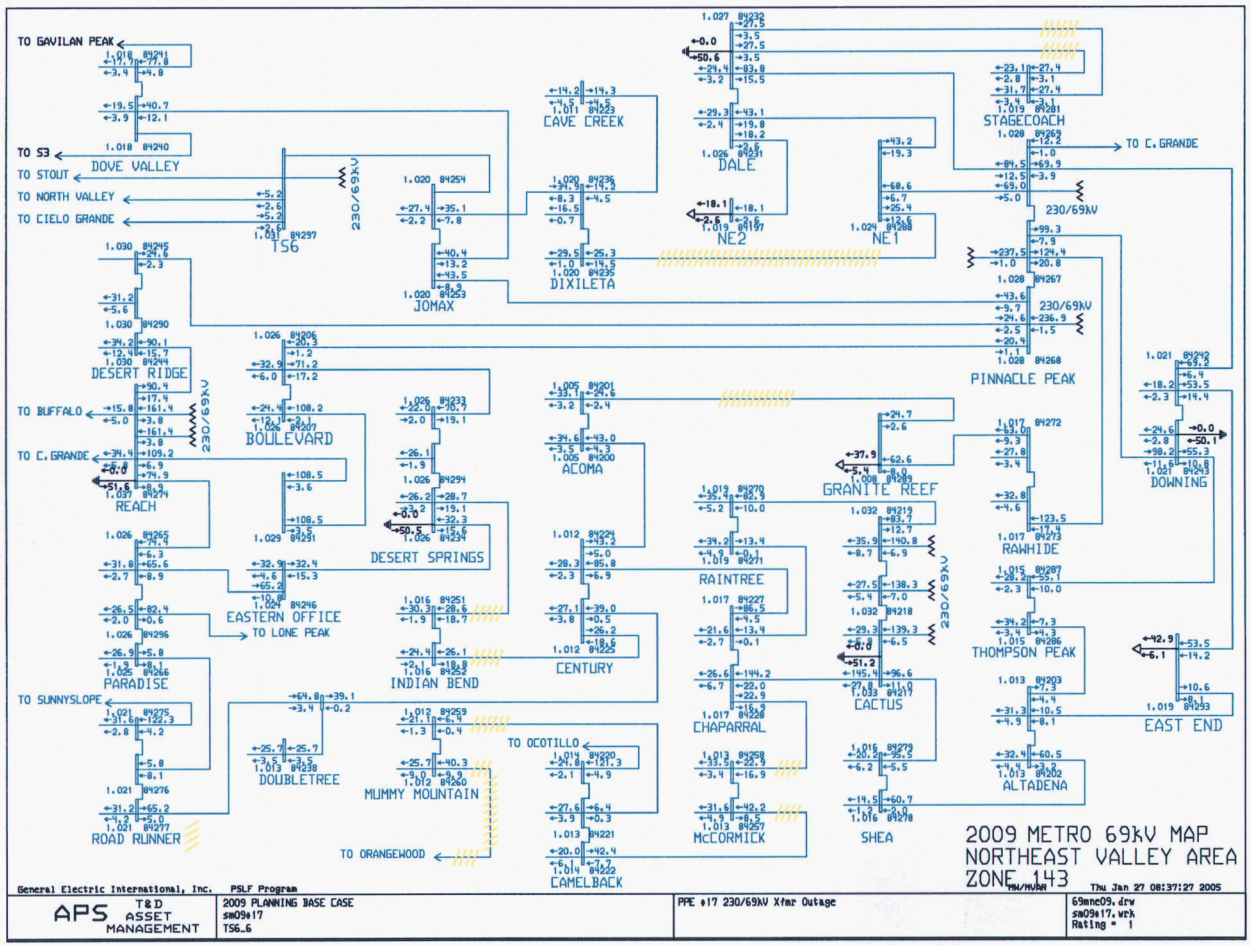
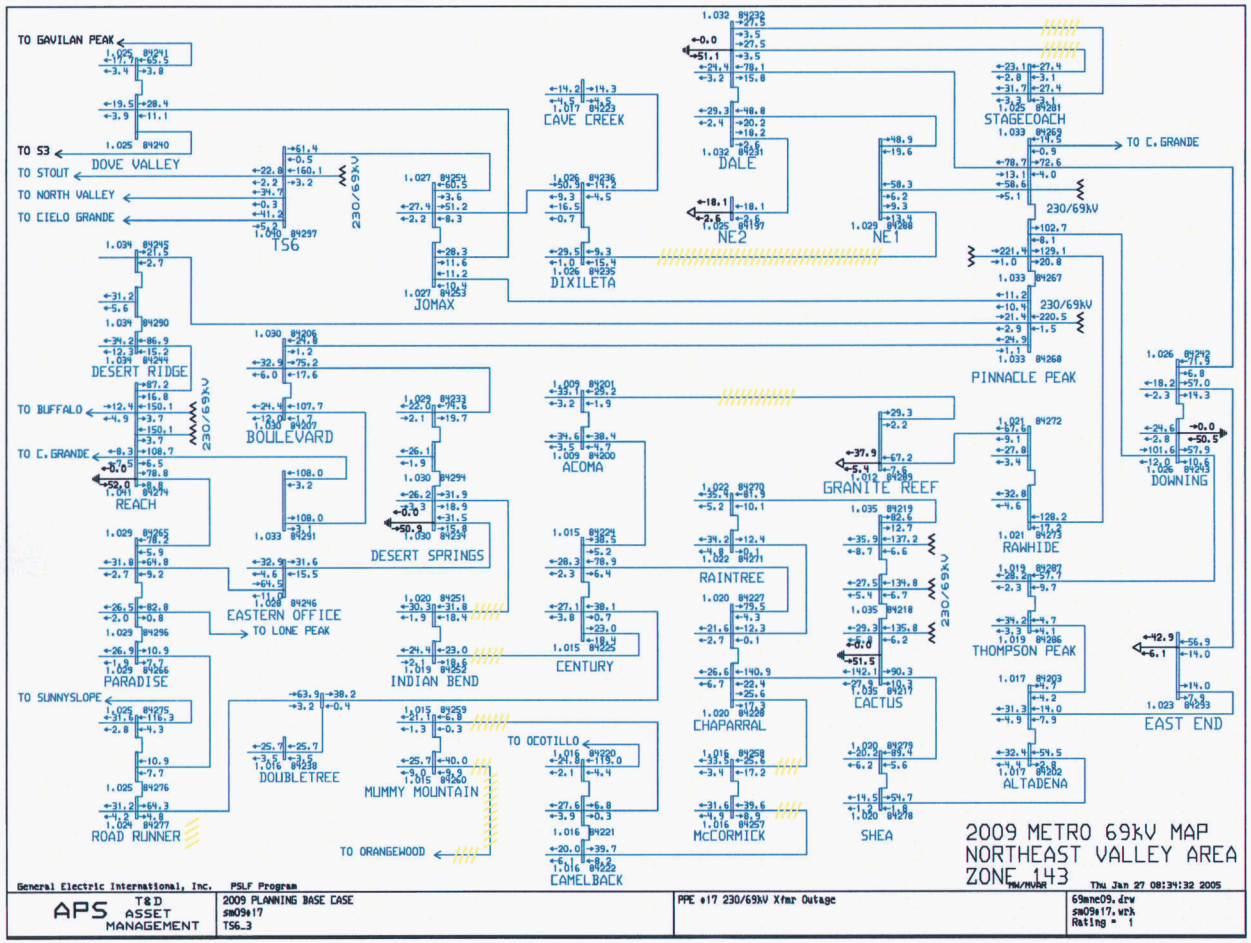
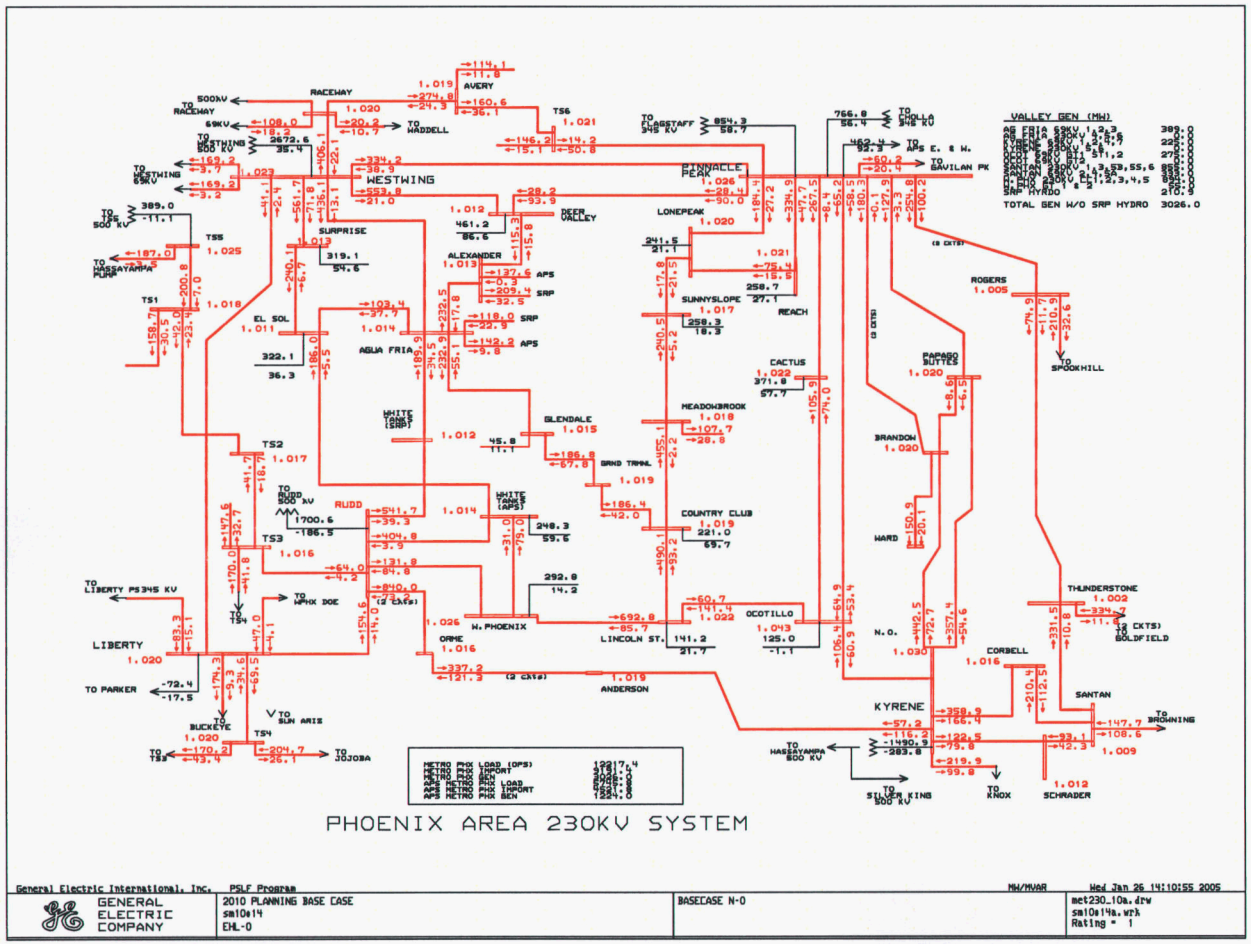
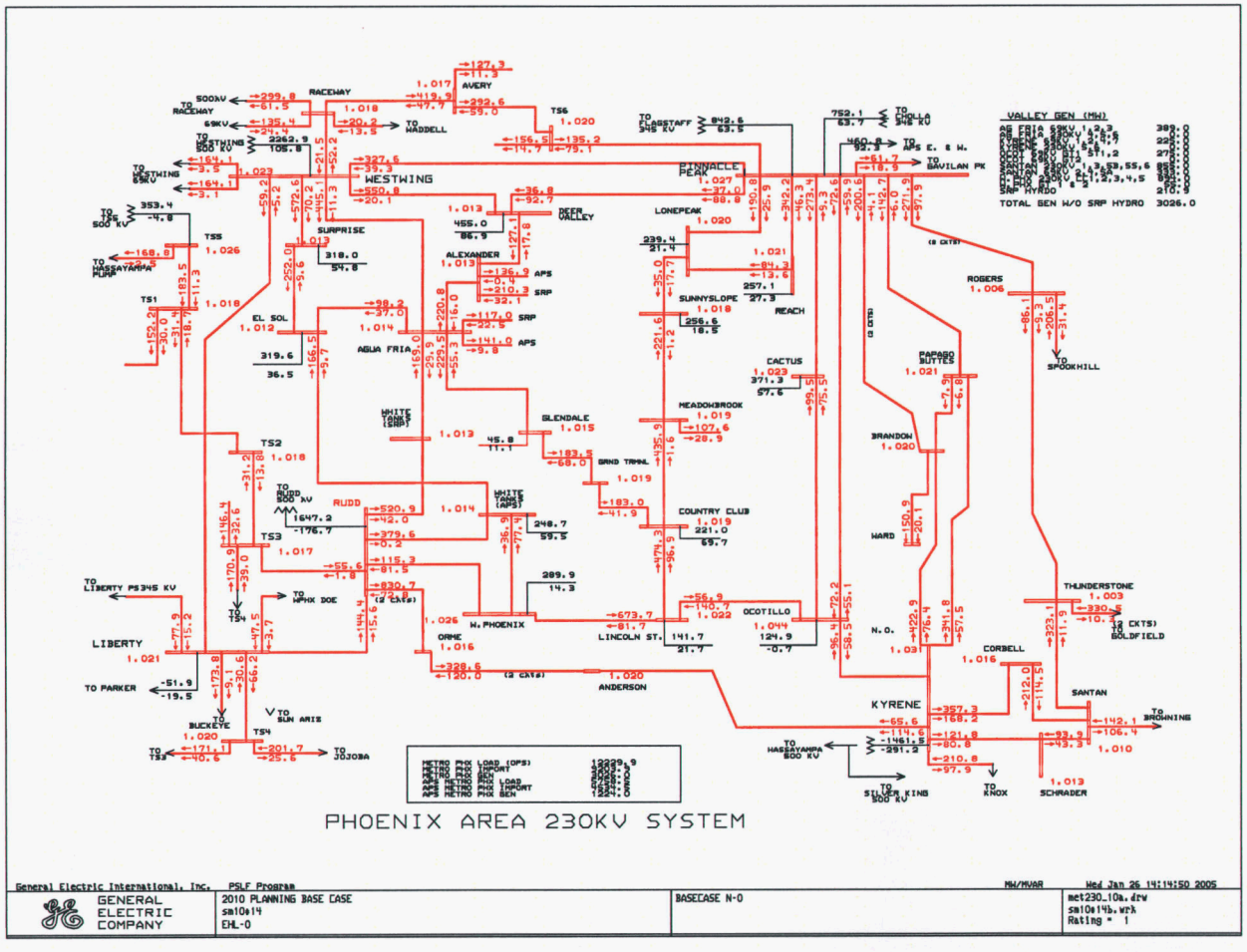
c:\upslf13\w-area\temp.sav
Rating = 1

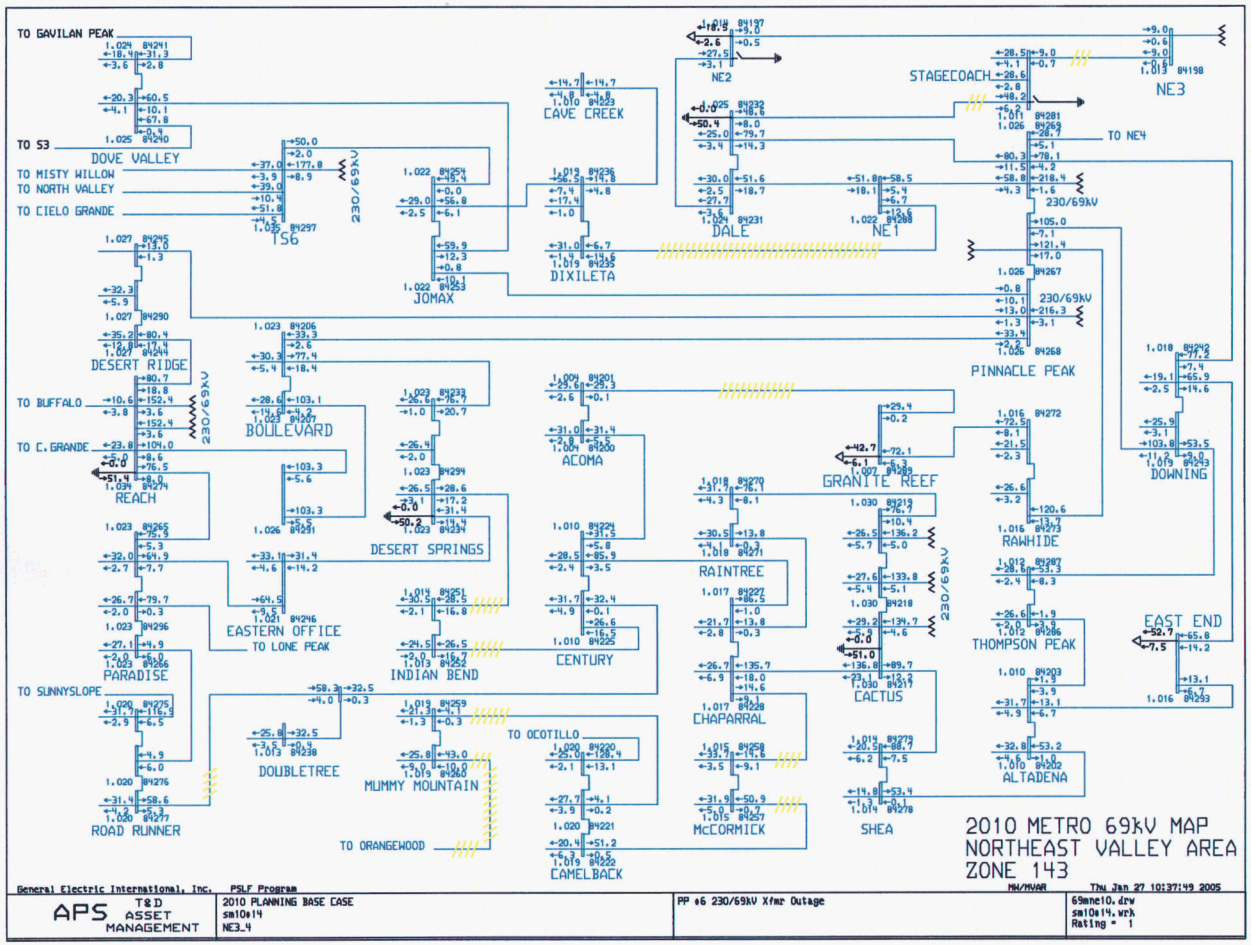

KEAMS CANYON
1.006
JEDDITO (NTUA)
1.010
TESHIN
INDIAN WELLS (NTUA)
1.024
LEUPP
230 KV
1.036
TO COCONINO 230 KV
CHOLLA 230 KV
1.045
TO 345 KV 203 MVA
CHOLLA 69 KV
1.051
LEROUX
1.043
EAST HOLBROOK
1.037
N.O.
WOODRUFF
1.046
DRY LAKE
SUNSHINE
1.035
DIABLO
LEUPP JCT.
1.034
WINSLOW
1.035
CHOLLA CONST
1.059
345KV
TO WINONA
HEBER (NEC)
1.037
ZENIFF
1.043
ABITIBI
1.034
BACON
1.045
SECOND KNOLL
500KV
1.049
1.065
BLUE RIDGE
1.030
LINDEN (NEC)
1.038
SHOWLOW 69 KV
1.039
69 KV
SNOWFLAKE
1.042
SHUMWAY 12 KV
1.068
SHOWLOW 12 KV
TO ALCHESAY
TO VERNON (NEC)
NORTHEAST DIVISION
CHOLLA/SHOWLOW DISTRICT
2009
R REGULATED BUS
General Electric International, Inc.
PSLF Program
MW/MVAR
Tue Jan 25 11:23:52 2005
APS T&D ASSET MANAGEMENT
2009 PLANNING BASE CASE W/ 2nd Knoll 500/69kV Xfmr
Cholla - Zeniff 69kV Line Out
c:\wpslf13\w-area\cholla09.drw
c:\wpslf13\w-area\temp.sav
Rating = 1

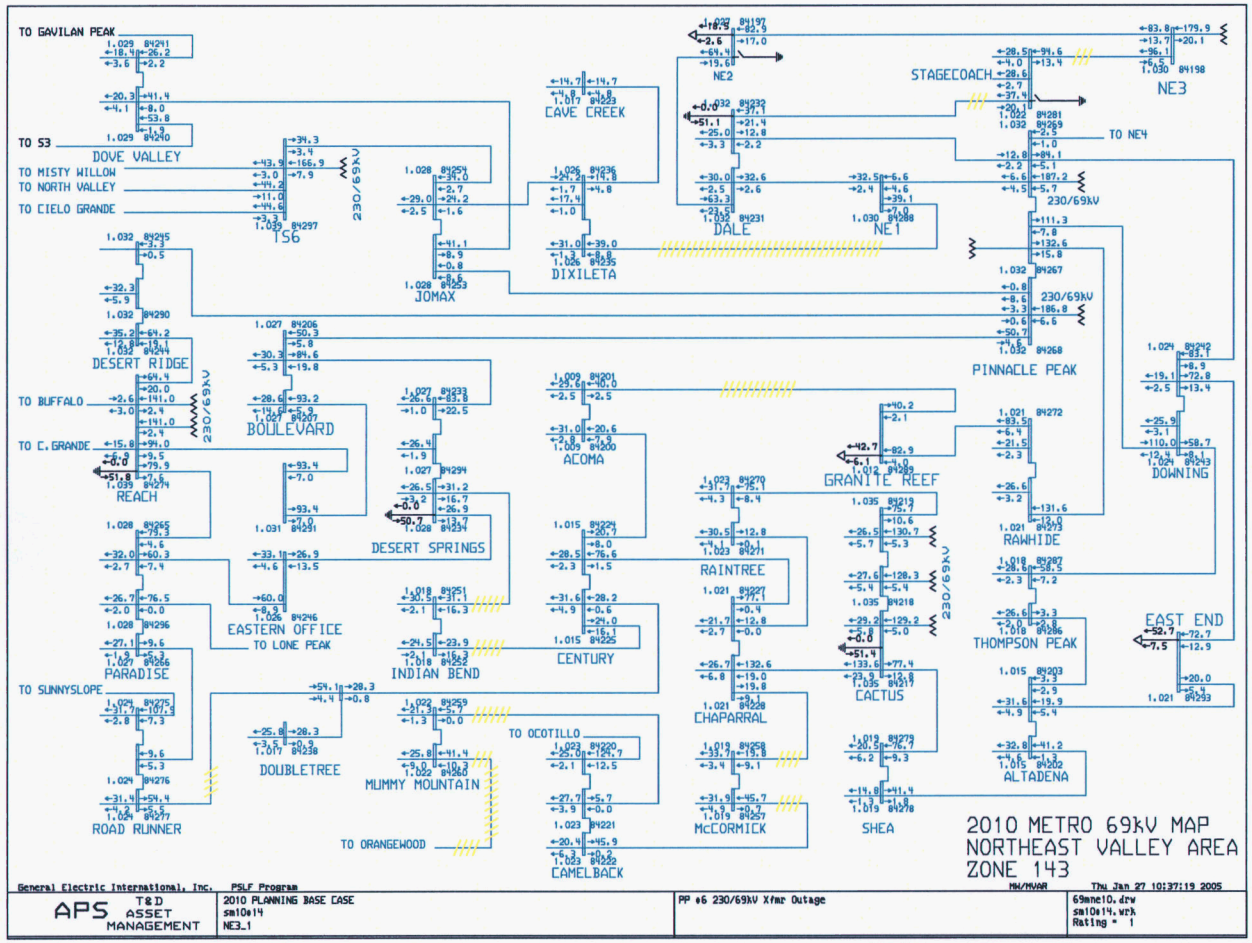

TO GAVILAN PEAK
TO S3
TO STOUT
TO NORTH VALLEY
TO CIELO GRANDE
DOVE VALLEY
TS6
230/69kV
JOMAX
CAVE CREEK
DIXILETA
DALE
NE2
NE1
STAGECOACH
TO C. GRANDE
230/69kV
PINNACLE PEAK
DESERT RIDGE
TO BUFFALO
TO C. GRANDE
REACH
BOULEVARD
DESERT SPRINGS
ACOMA
GRANITE REEF
RAWHIDE
DOWNING
EASTERN OFFICE
TO LONE PEAK
RAINTREE
THOMPSON PEAK
PARADISE
INDIAN BEND
CENTURY
TO SUNNYSLOPE
TO OCOTILLO
DOUBLETREE
MUMMY MOUNTAIN
CHAPARRAL
CACTUS
EAST END
ROAD RUNNER
TO ORANGEWOOD
McCORMICK
SHEA
ALTADENA
CAMELBACK
2009 METRO 69kV MAP
NORTHEAST VALLEY AREA
ZONE 143
MW/MVAR
Thu Jan 27 08:37:27 2005
General Electric International, Inc.
PSLF Program
APS T&D ASSET MANAGEMENT
2009 PLANNING BASE CASE
sm09w17
TS6_6
PPE #17 230/69kV Xfmr Outage
69mnc09.drw
sm09w17.wrk
Rating = 1

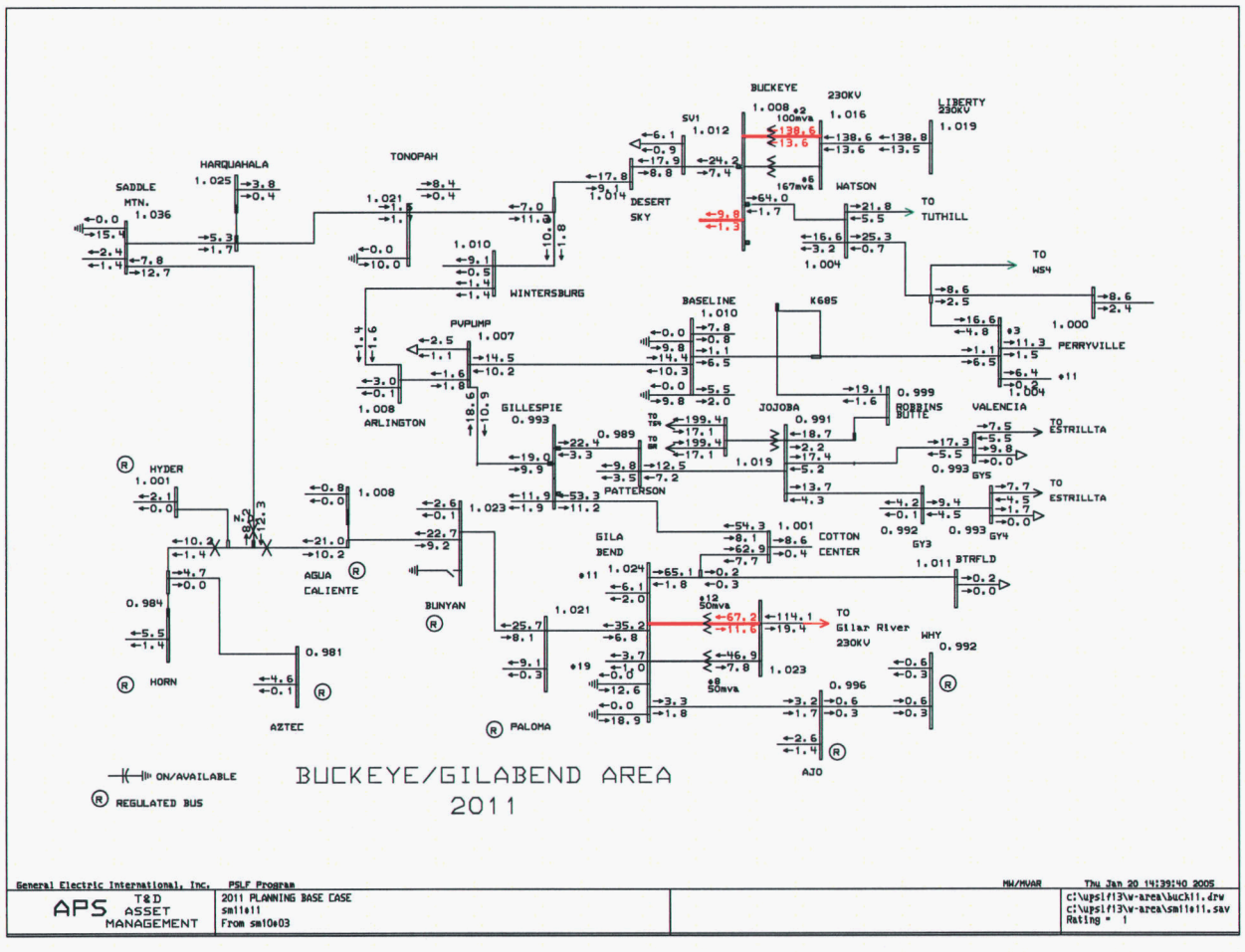

TO GAVILAN PEAK
TO S3
TO STOUT
TO NORTH VALLEY
TO CIELO GRANDE
DOVE VALLEY
TS6
230/69kV
JOMAX
CAVE CREEK
DIXILETA
DALE
NE2
NE1
STAGECOACH
TO C. GRANDE
PINNACLE PEAK
DESERT RIDGE
TO BUFFALO
TO C. GRANDE
REACH
BOULEVARD
DESERT SPRINGS
ACOMA
GRANITE REEF
RAWHIDE
DOWNING
EASTERN OFFICE
TO LONE PEAK
RAINTREE
THOMPSON PEAK
TO SUNNYSLOPE
PARADISE
INDIAN BEND
CENTURY
CHAPARRAL
CACTUS
EAST END
DOUBLETREE
TO OCOTILLO
MUMMY MOUNTAIN
ALTADENA
ROAD RUNNER
TO ORANGEWOOD
McCORMICK
SHEA
CAMELBACK
2009 METRO 69kV MAP
NORTHEAST VALLEY AREA
ZONE 143
MW/MVAR
Thu Jan 27 08:34:32 2005
General Electric International, Inc.
PSLF Program
APS T&D ASSET MANAGEMENT
2009 PLANNING BASE CASE
sm09s17
TS6_3
PPE #17 230/69kV Xfmr Outage
69mne09.drw
sm09s17.wrk
Rating = 1

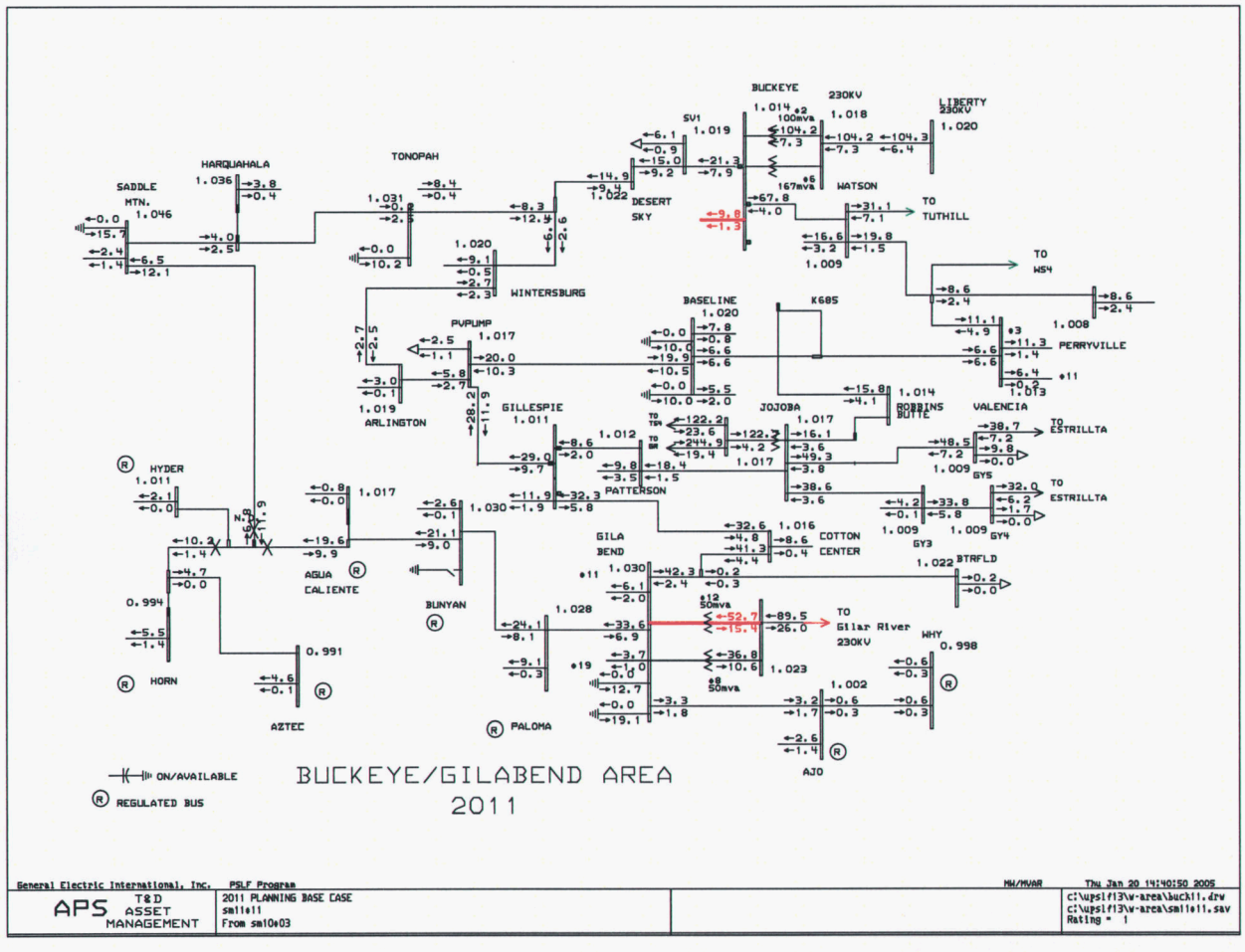

PHOENIX AREA 230KV SYSTEM
WESTWING
RACEWAY
AVERY
TS6
PINNACLE PEAK
LONEPEAK
DEER VALLEY
SURPRISE
ALEXANDER
SUNNYSLOPE
REACH
ROGERS
SPOOKHILL
EL SOL
AGUA FRIA
CACTUS
RAPADO BUTTES
MEADOWBROOK
BRANDON
GLENDALE
BRND TRNK
WHITE TANKS (SRP)
WHITE TANKS (APS)
RUDD
COUNTRY CLUB
HARD
TS1
TS2
TS3
TS4
TS5
LIBERTY
TO PARKER
BUCKEYE
SUN ARIS
W. PHOENIX
ORME
LINCOLN ST.
ANDERSON
OCOTILLO
N.O.
KYRENE
CORBELL
THUNDERSTONE
SANTAN
BOLDFIELD
BROWNING
SCHRADER
TO KNOX
TO SILVER KING 500 KV
TO HASSAYAMPA 500 KV
TO JOJOBA
TO LIBERTY PS345 KV
TO PHX DOE
TO RUDD 500 KV
TO RACEWAY
TO WESTWING 500 KV
TO WESTWING 69KV
TO HADDELL
TO FLAGSTAFF 345 KV
TO SUN 500 KV
TO APS E. & W.
TO GAVILAN PK
TO HASSAYAMPA PUMP
TO TPS 500 KV
VALLEY GEN (MW)
TOTAL GEN W/O SRP HYDRO 3026.0
LOAD (OPS)
IMPORT
LOAD
IMPORT
GEN
General Electric International, Inc.
PSLF Program
MW/MVAR
Wed Jan 26 14:10:55 2005
GENERAL ELECTRIC COMPANY
2010 PLANNING BASE CASE
sm10e14
EHL-0
BASECASE N-0
met230_10a.drw
sm10e14a.wrk
Rating = 1

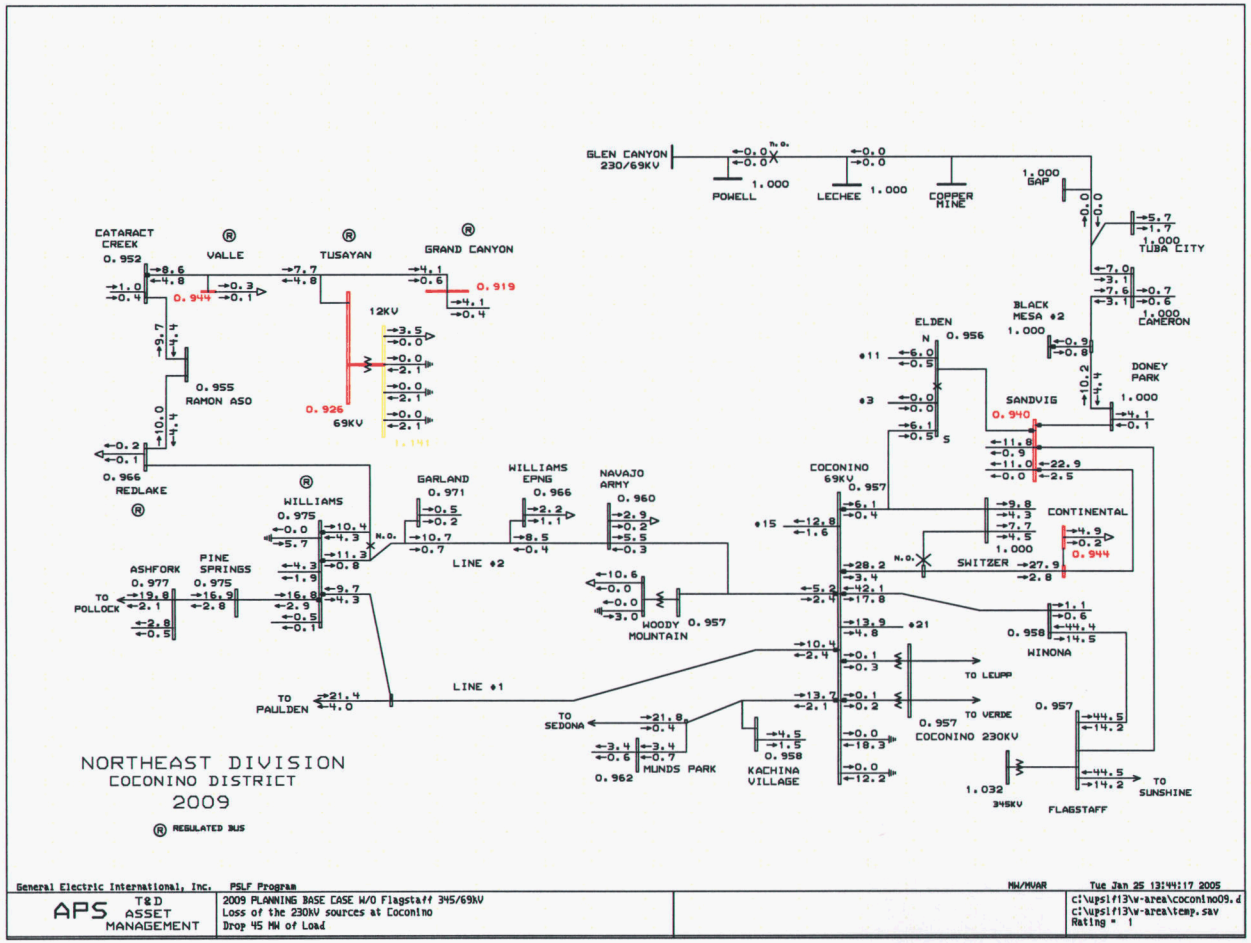

PHOENIX AREA 230KV SYSTEM
General Electric International, Inc.
PSLF Program
GENERAL ELECTRIC COMPANY
2010 PLANNING BASE CASE
sm10e14
EHL-0
BASECASE N-0
MW/MVAR
Wed Jan 26 14:14:50 2005
met230_10a.drw
sm10e14b.wrk
Rating = 1
WESTWING
RACEWAY
AVERY
TS6
PINNACLE PEAK
LONEPEAK
DEER VALLEY
SURPRISE
ALEXANDER
SUNNYSLOPE
REACH
ROGERS
SPOOKHILL
TS5
TS1
EL SOL
AGUA FRIA
CACTUS
RAPADO SUITES
BRANDON
HARD
WHITE TANKS (SRP)
GLENDALE
MEADOWBROOK
GRID TRNL
COUNTRY CLUB
TS2
RUDD
WHITE TANKS (APS)
TS3
LIBERTY
TO PARKER
TO BUCKEYE
TS4
TO TS3
TO JOJOBA
W. PHOENIX
ORME
LINCOLN ST.
OCOTILLO
ANDERSON
N.O.
KYRENE
CORBELL
THUNDERSTONE
SANTAN
TO BROWNING
TO BOLDFIELD
TO HASSAYAMPA 500 KV
TO SILVER KING 500 KV
TO KNOX
SCHRADER
TO GAVILAN PK
TO FLAGSTAFF 345 KV
TO NPHX DOE
TO SUN ARIE
VALLEY GEN (MW)
TOTAL GEN W/O SRP HYDRO 3026.0


TO GAVILAN PEAK
DOVE VALLEY
TO S3
TO MISTY WILLOW
TO NORTH VALLEY
TO CIELO GRANDE
TS6
230/69kV
JOMAX
CAVE CREEK
DIXILETA
NE2
DALE
NE1
STAGECOACH
NE3
TO NE4
230/69kV
PINNACLE PEAK
DESERT RIDGE
TO BUFFALO
TO C.GRANDE
REACH
BOULEVARD
DESERT SPRINGS
ACOMA
GRANITE REEF
RAINTREE
CHAPARRAL
McCORMICK
CACTUS
SHEA
DOWNING
RAWHIDE
THOMPSON PEAK
EAST END
ALTADENA
EASTERN OFFICE
TO LONE PEAK
PARADISE
TO SUNNYSLOPE
ROAD RUNNER
DOUBLETREE
INDIAN BEND
MUMMY MOUNTAIN
TO OCOTILLO
TO ORANGEWOOD
CENTURY
CAMELBACK
2010 METRO 69kV MAP
NORTHEAST VALLEY AREA
ZONE 143
General Electric International, Inc.
PSLF Program
MW/MVAR
Thu Jan 27 10:37:49 2005
APS T&D ASSET MANAGEMENT
2010 PLANNING BASE CASE
sm10e14
NE3_4
PP #6 230/69kV Xfmr Outage
69ane10.drw
sm10e14.wrk
Rating = 1


TO GAVILAN PEAK
TO S3
DOVE VALLEY
TO MISTY WILLOW
TO NORTH VALLEY
TO CIELO GRANDE
TS6
230/69kV
JOMAX
CAVE CREEK
DIXILETA
NE2
DALE
NE1
STAGECOACH
NE3
TO NE4
230/69kV
PINNACLE PEAK
DESERT RIDGE
TO BUFFALO
TO C. GRANDE
REACH
BOULEVARD
DESERT SPRINGS
ACOMA
GRANITE REEF
RAWHIDE
DOWNING
EASTERN OFFICE
TO LONE PEAK
INDIAN BEND
CENTURY
RAINTREE
THOMPSON PEAK
EAST END
PARADISE
TO SUNNYSLOPE
DOUBLETREE
MUMMY MOUNTAIN
TO OCOTILLO
CHAPARRAL
CACTUS
ALTADENA
ROAD RUNNER
TO ORANGEWOOD
CAMELBACK
McCORMICK
SHEA
2010 METRO 69kV MAP
NORTHEAST VALLEY AREA
ZONE 143
General Electric International, Inc.
PSLF Program
MW/MVAR
Thu Jan 27 10:37:19 2005
APS T&D ASSET MANAGEMENT
2010 PLANNING BASE CASE
sm10e14
NE3_1
PP #6 230/69kV Xfmr Outage
69mne10.drw
sm10e14.wrk
Rating = 1


BUCKEYE
1.008
230KV
1.016
LIBERTY
230KV
1.019
SV1
1.012
100mva
138.6
13.6
167mva
WATSON
DESERT
SKY
1.014
TO
TUTHILL
TO
WS4
1.004
1.000
PERRYVILLE
1.004
HARQUAHALA
1.025
SADDLE
MTN.
1.036
TONOPAH
1.021
WINTERSBURG
1.010
PVPUMP
1.007
ARLINGTON
1.008
BASELINE
1.010
K685
JOJOBA
0.991
BOBBINS
BUTTE
0.999
VALENCIA
GILLESPIE
0.993
0.989
PATTERSON
1.019
GYS
0.993
TO
ESTRILLTA
GY3
0.992
GY4
0.993
HYDER
1.001
1.008
AGUA
CALIENTE
BUNYAN
1.023
GILA
BEND
1.024
1.021
COTTON
CENTER
1.001
BTRFLD
1.011
TO
Gilar River
230KV
WHY
0.992
0.996
AJO
HORN
0.984
0.981
AZTEC
PALOMA
ON/AVAILABLE
REGULATED BUS
BUCKEYE/GILABEND AREA
2011
General Electric International, Inc.
PSLF Program
MW/MVAR
Thu Jan 20 14:39:40 2005
APS T&D ASSET MANAGEMENT
2011 PLANNING BASE CASE
sm11e11
From sm10e03
c:\wpslf13\w-area\buck11.drw
c:\wpslf13\w-area\sm11e11.sav
Rating = 1


BUCKEYE
230KV
LIBERTY
230KV
SV1
HARQUAHALA
TONOPAH
SADDLE
MTN.
DESERT
SKY
WATSON
TO
TUTHILL
TO
WS4
WINTERSBURG
BASELINE
K68S
PVPUMP
PERRYVILLE
ARLINGTON
GILLESPIE
JOJOBA
ROBBINS
BUTTE
VALENCIA
TO
ESTRILLA
HYDER
PATTERSON
GILA
BEND
COTTON
CENTER
BTRFLD
AGUA
CALIENTE
BUNYAN
TO
Gila River
230KV
WHY
HORN
AZTEC
PALOMA
AJO
ON/AVAILABLE
REGULATED BUS
BUCKEYE/GILABEND AREA
2011
General Electric International, Inc.
PSLF Program
MW/MVAR
Thu Jan 20 14:40:50 2005
APS T&D ASSET MANAGEMENT
2011 PLANNING BASE CASE
sm11e11
From sm10e03
c:\wpslf13\w-area\buck11.drw
c:\wpslf13\w-area\sm11e11.sav
Rating = 1


GLEN CANYON 230/69KV
POWELL
LECHEE
COPPER MINE
GAP
TUBA CITY
CAMERON
CATARACT CREEK
VALLE
TUSAYAN
GRAND CANYON
12KV
69KV
RAMON ASO
REDLAKE
WILLIAMS
GARLAND
WILLIAMS EPNG
NAVAJO ARMY
LINE #2
LINE #1
ASHFORK
PINE SPRINGS
TO POLLOCK
TO PAULDEN
WOODY MOUNTAIN
ELDEN
BLACK MESA #2
DONEY PARK
SANDVIG
COCONINO 69KV
CONTINENTAL
SWITZER
WINONA
TO LEUPP
TO VERDE
COCONINO 230KV
345KV
FLAGSTAFF
TO SUNSHINE
TO SEDONA
MUNDS PARK
KACHINA VILLAGE
NORTHEAST DIVISION
COCONINO DISTRICT
2009
REGULATED BUS
General Electric International, Inc.
PSLF Program
MW/MVAR
Tue Jan 25 13:44:17 2005
APS T&D ASSET MANAGEMENT
2009 PLANNING BASE CASE W/O Flagstaff 345/69KV
Loss of the 230KV sources at Coconino
Drop 45 MW of Load
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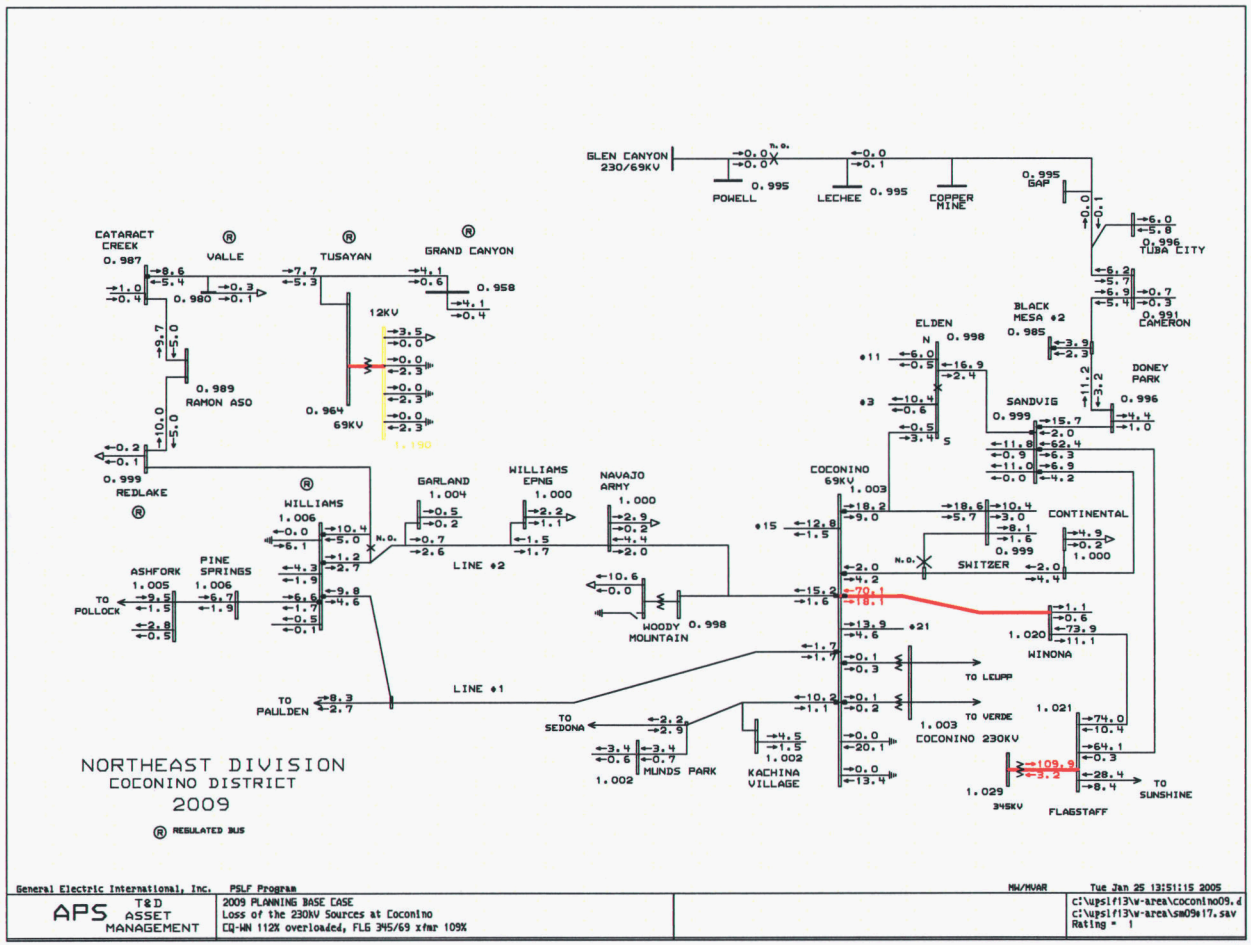
c:\upslf13\w-area\temp.sav
Rating = 1


GLEN CANYON 230/69KV
POWELL
LECHEE
COPPER MINE
GAP
TUBA CITY
CAMERON
CATARACT CREEK
VALLE
TUSAYAN
GRAND CANYON
12KV
69KV
RAMON ASO
REDLAKE
ELDEN
BLACK MESA #2
DONEY PARK
SANDVIG
WILLIAMS
GARLAND
WILLIAMS EPNG
NAVAJO ARMY
COCONINO 69KV
CONTINENTAL
SWITZER
ASHFORK
PINE SPRINGS
TO POLLOCK
LINE #2
LINE #1
TO PAULDEN
WOODY MOUNTAIN
TO LEUPP
TO VERDE
COCONINO 230KV
WINONA
TO SEDONA
MUNDS PARK
KACHINA VILLAGE
345KV
FLAGSTAFF
TO SUNSHINE
NORTHEAST DIVISION
COCONINO DISTRICT
2009
REGULATED BUS
General Electric International, Inc.
PSLF Program
MW/MVAR
Tue Jan 25 13:51:15 2005
APS T&D ASSET MANAGEMENT
2009 PLANNING BASE CASE
Loss of the 230KV Sources at Coconino
CQ-WN 112% overloaded, FLG 345/69 xfmr 109%
c:\upslf13w-area\coconino09.d
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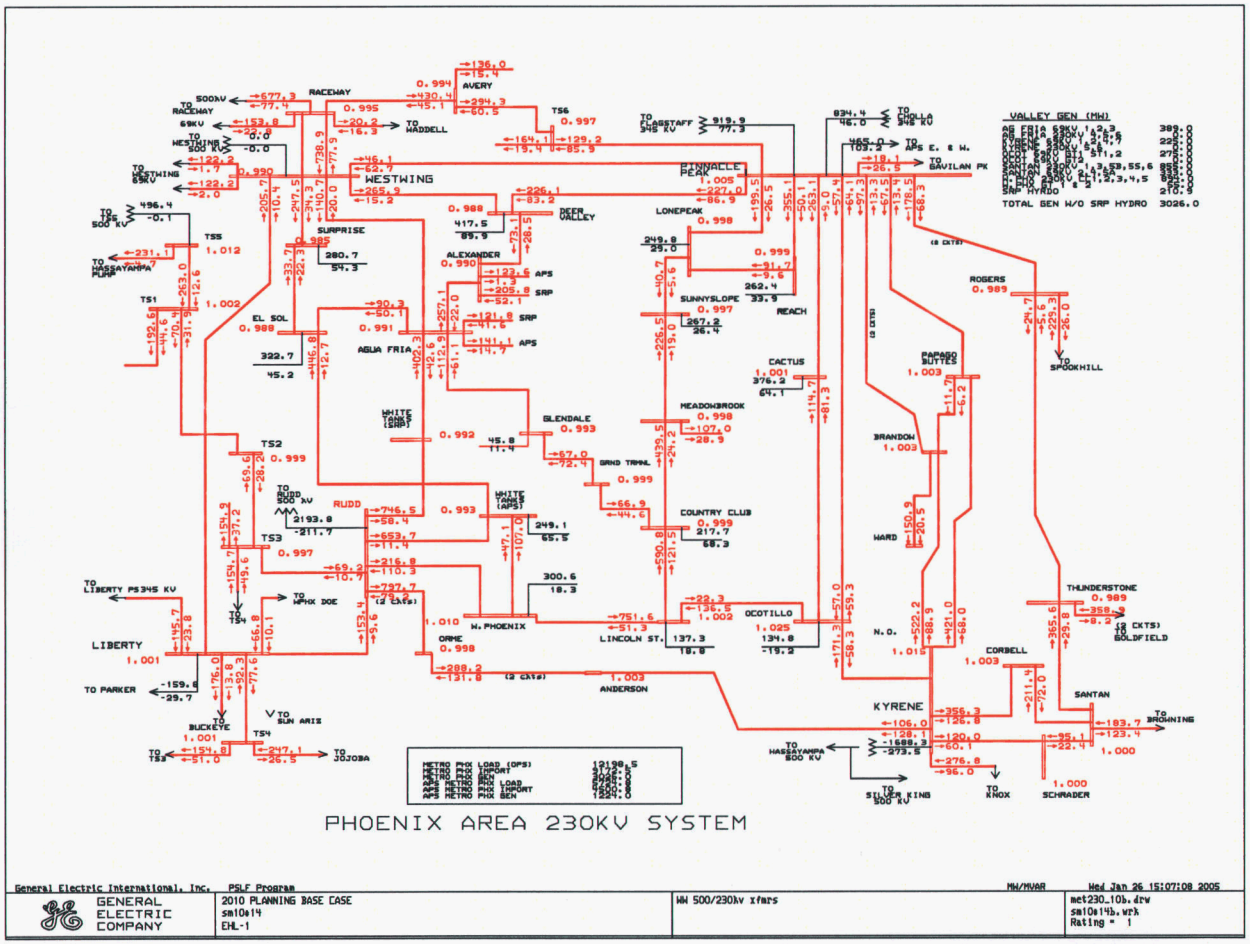
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PINNACLE PEAK
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TS6
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LONEPEAK
ALEXANDER
TS5
TS1
EL SOL
AGUA FRIA
WHITE TANKS (SRP)
WHITE TANKS (APS)
GLENDALE
GRAND TRUNK
MEADOWBROOK
SUNNYSLOPE
REACH
CACTUS
COUNTRY CLUB
TS2
RUDD
TS3
HASSAYAMPA
LIBERTY
TO PARKER
BUCKEYE
TS4
ORME
W. PHOENIX
LINCOLN ST.
ANDERSON
OCOTILLO
N.O.
KYRENE
CORBELL
SANTAN
BRANDON
HARD
ROGERS
PAPAGO BUTTES
THUNDERSTONE
GOLDFIELD
SCHRADER
KNOX
GAVILAN PK
SPOKEHILL
BROWNING
SUN ARIS
JOJOBA
VALLEY GEN (MW)
TOTAL GEN W/O SRP HYDRO 3026.0
PSLF Program
MW/MVAR
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GENERAL ELECTRIC COMPANY
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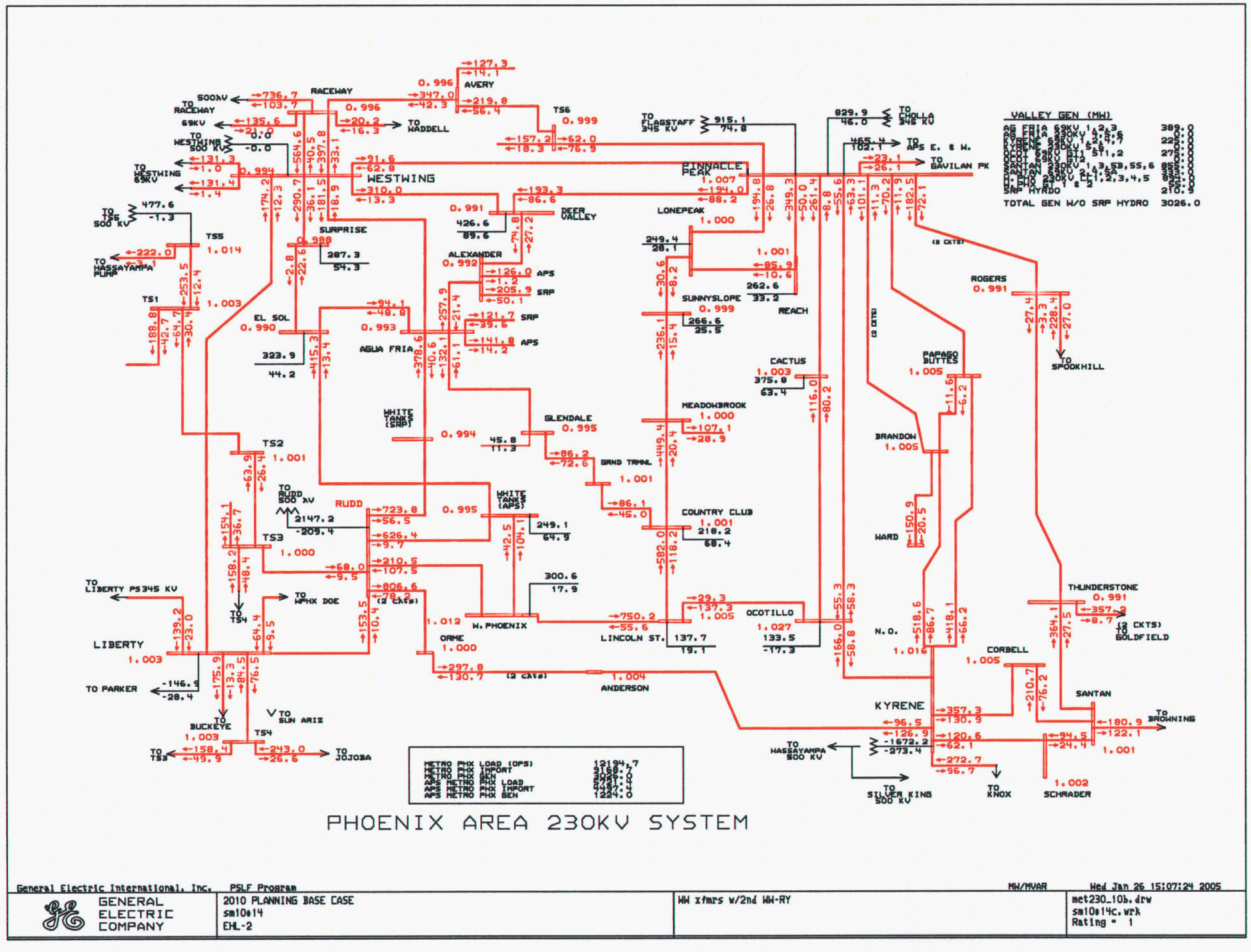
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General Electric International, Inc.
PSLF Program
GENERAL ELECTRIC COMPANY
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SPOOKHILL
CACTUS
PAPAGO BUTTES
BRANDON
HARD
THUNDERSTONE
CORBELL
SANTAN
KYRENE
N.O.
OCOTILLO
COUNTRY CLUB
MEADOWBROOK
BRND TRNK
BLENDALE
WHITE TANKS (SRP)
WHITE TANKS (APS)
RUDD
TS3
TS2
TS1
TS5
TS4
SURPRISE
EL SOL
AGUA FRIA
ALEXANDER
DEER VALLEY
W. PHOENIX
ORME
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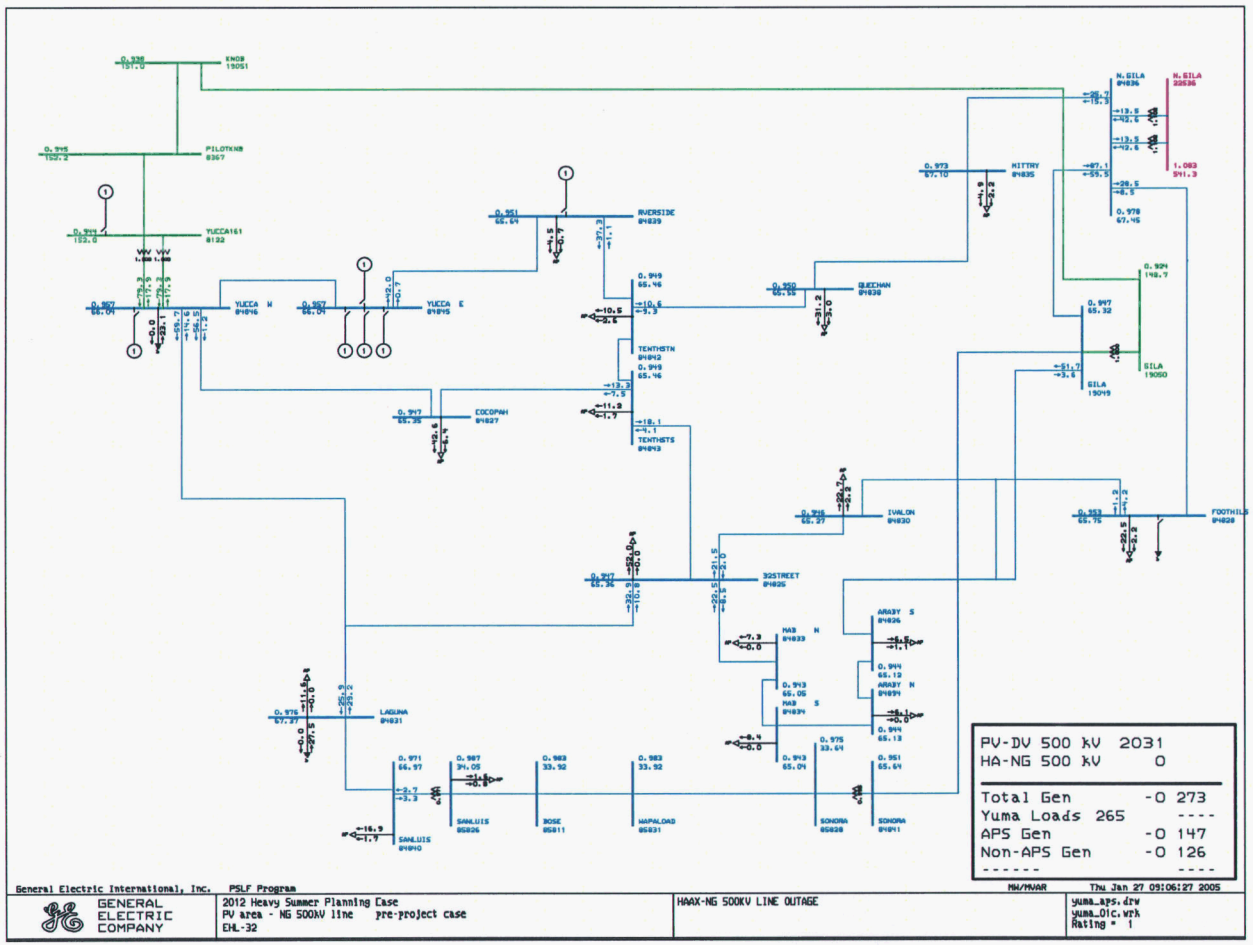
LIBERTY
BUCKEYE
JOJOBA
SCHRADER
VALLEY GEN (MW)
TOTAL GEN W/O SRP HYDRO 3026.0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APS Gen -0 147
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General Electric International, Inc. PSLF Program
GENERAL ELECTRIC COMPANY
2012 Heavy Summer Planning Case
PV area - NG 500kV line pre-project case
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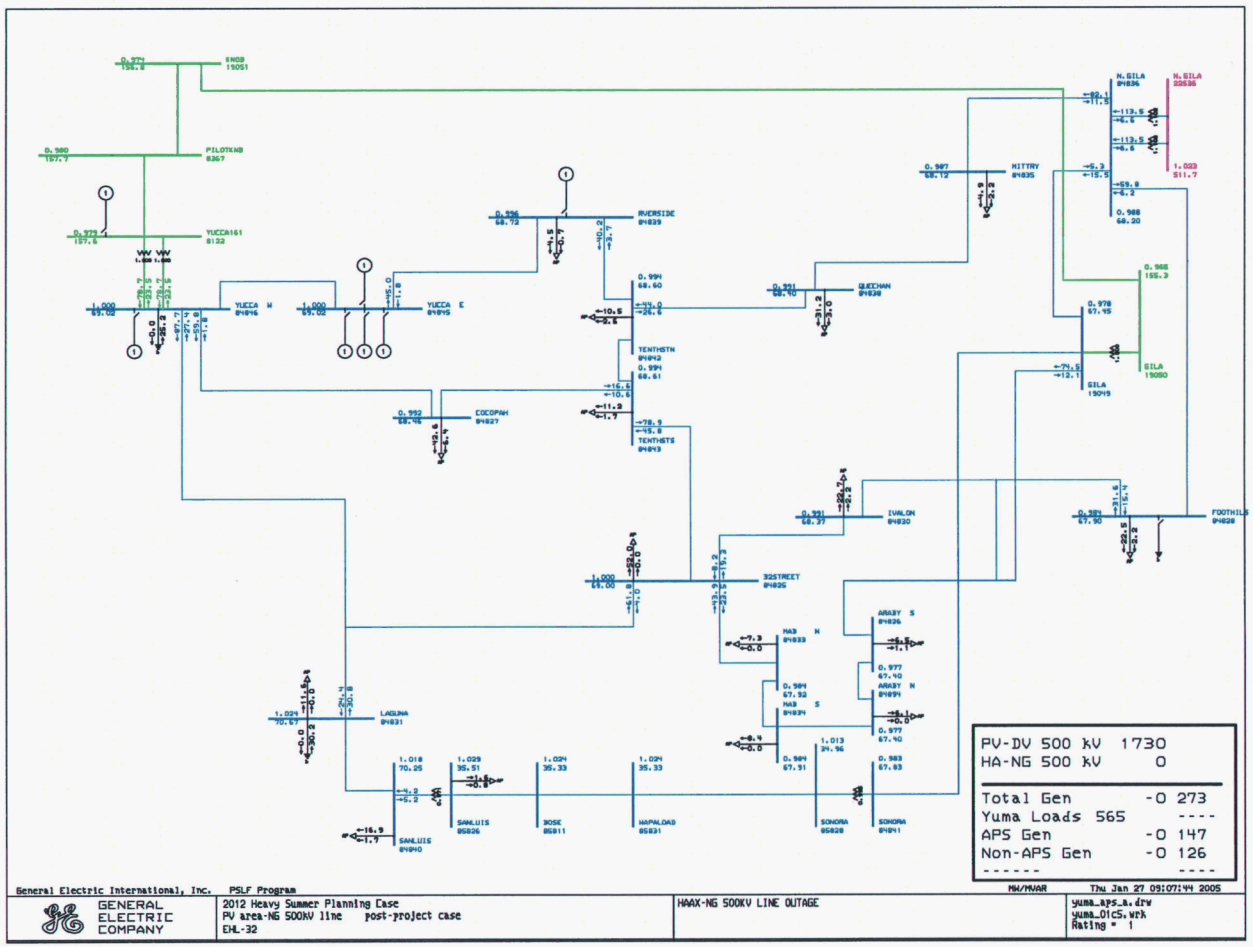
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Non-APS Gen -0 126
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PV area-NG 500KV line post-project case
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HAAX-NG 500KV LINE OUTAGE
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yuma_01c5.wrk
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APPENDIX B
2007
STABILITY
PLOTS

APPENDIX B

2007
Stability Plots

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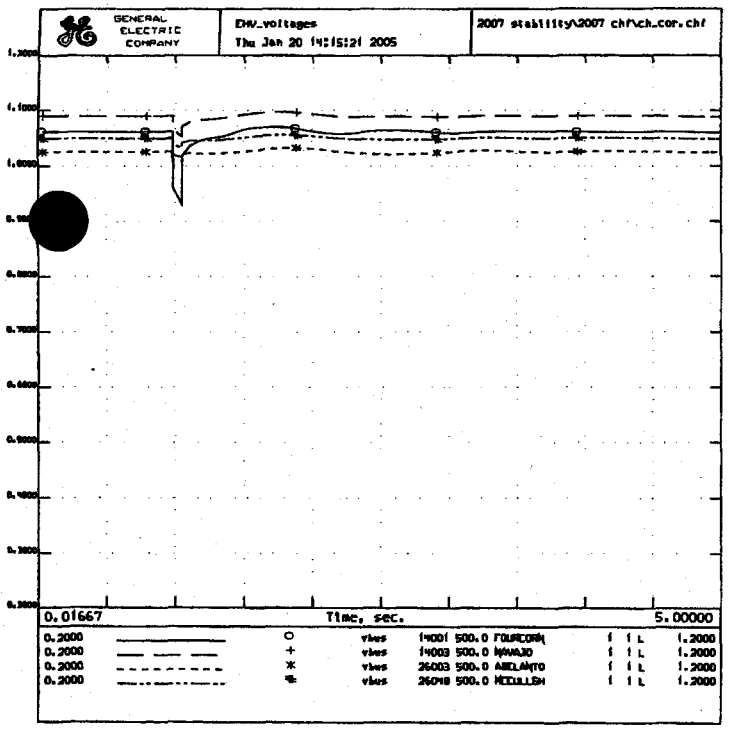

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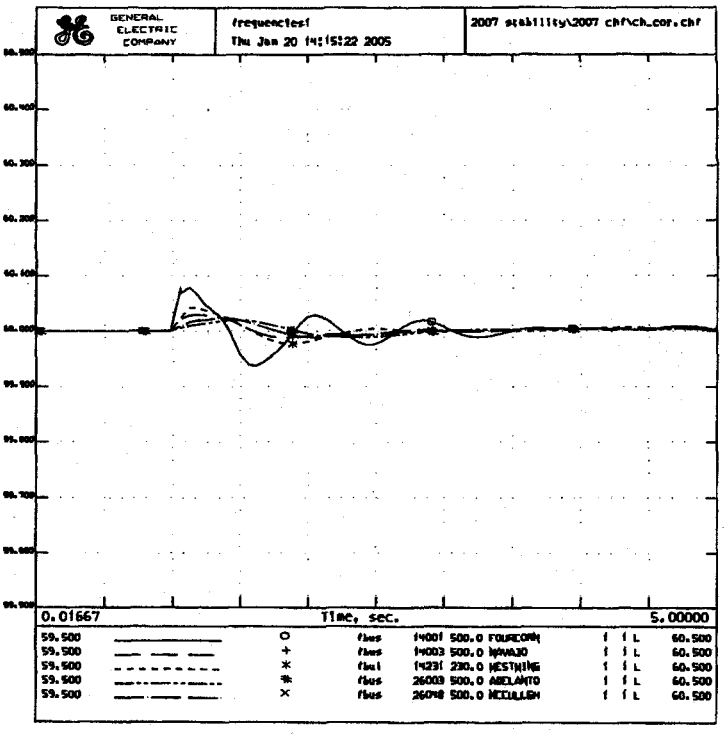
OCTOBER 13, 2004
CH-COR STAB; 1/05; T+0 3P FLT CH500;4C CLR FLT
N/CH-COR;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



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N/CH-COR;2007.dyd;HSCC.bpt

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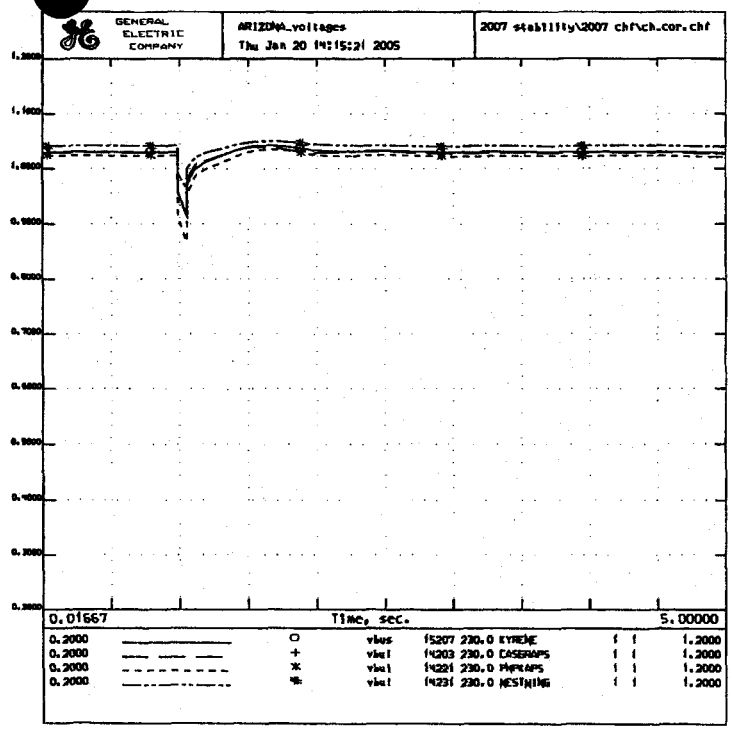

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N/CH-COR;2007.dyd;HSCC.bpt

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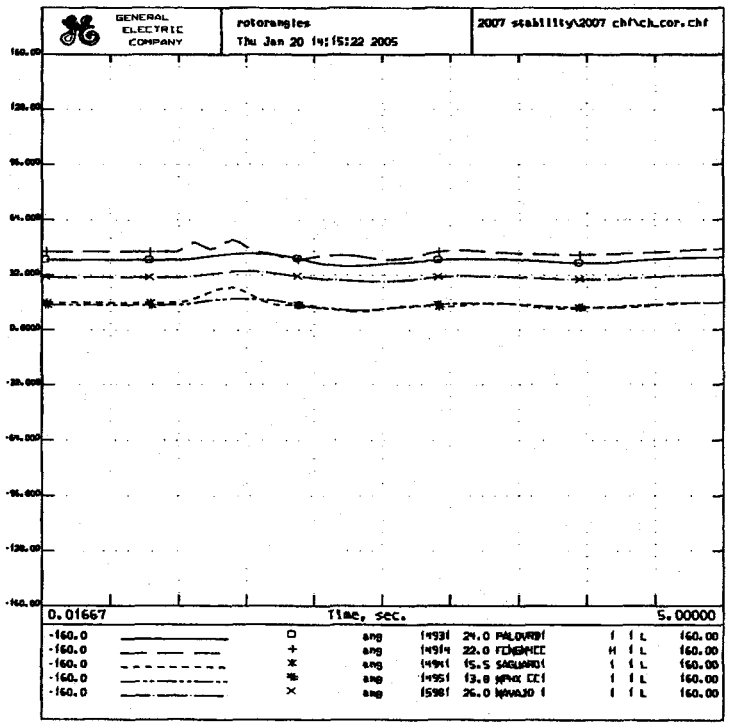

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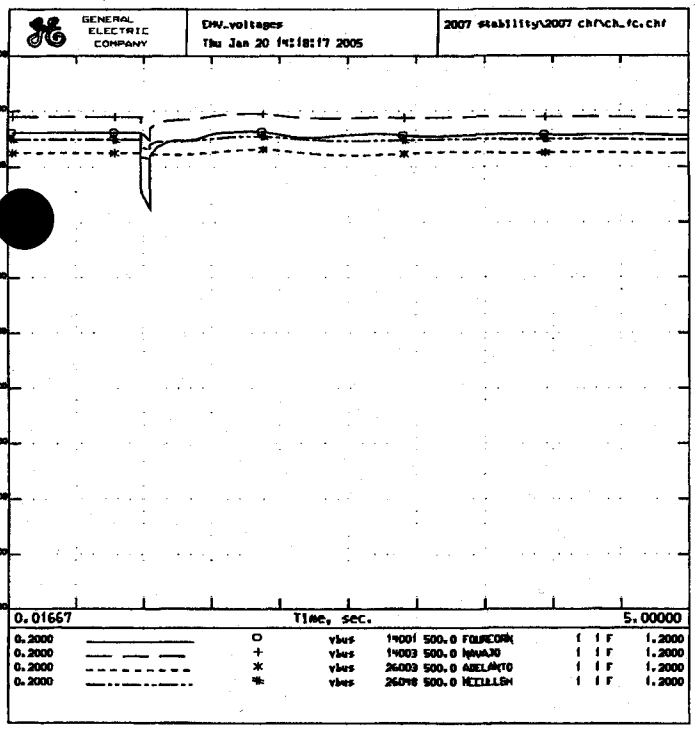

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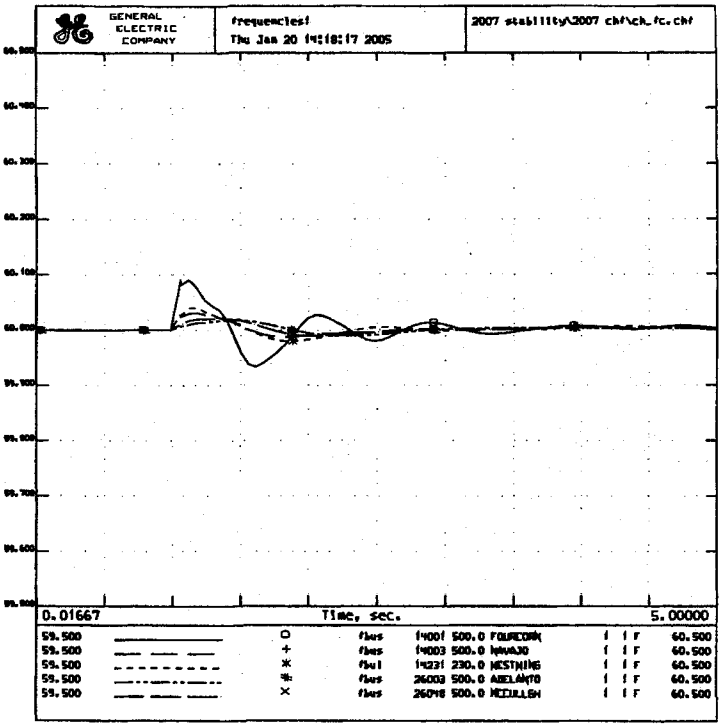

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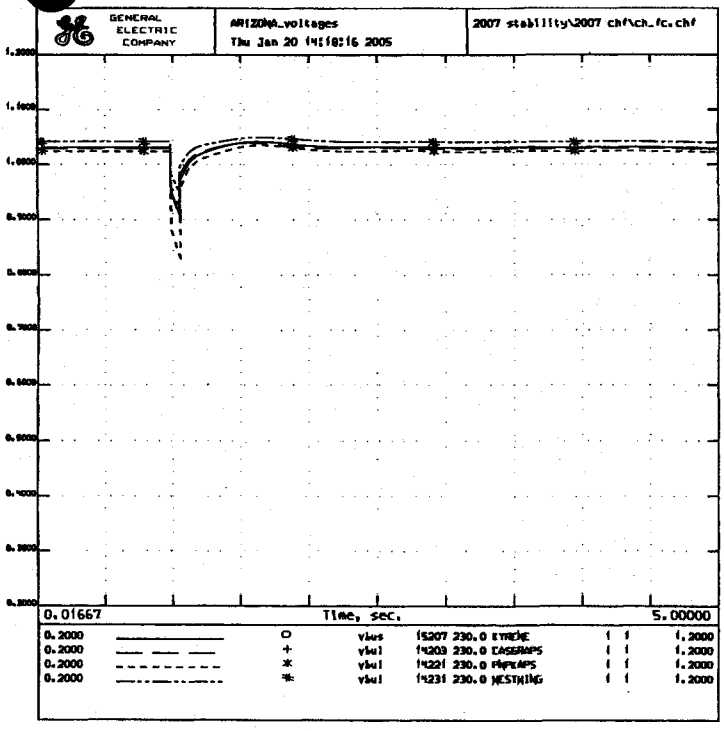

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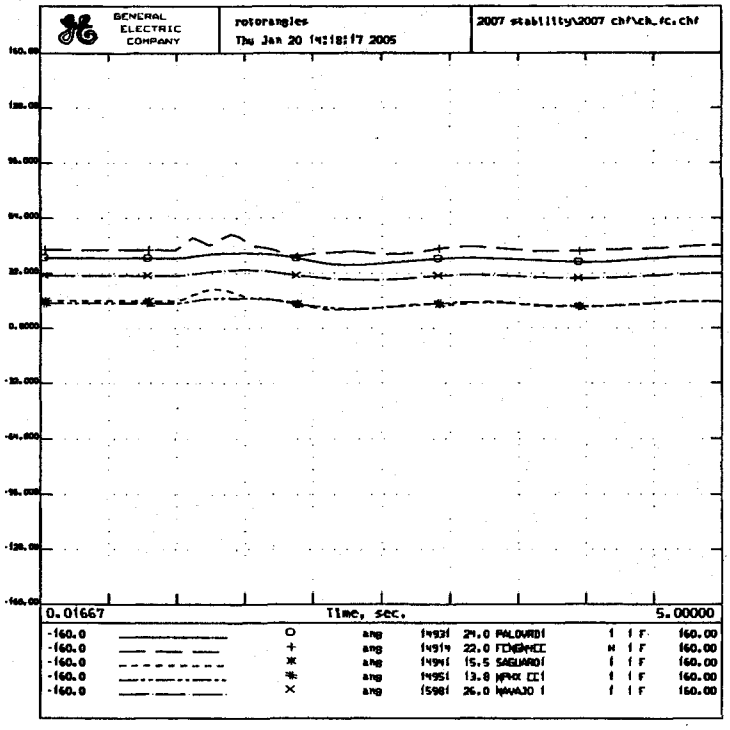

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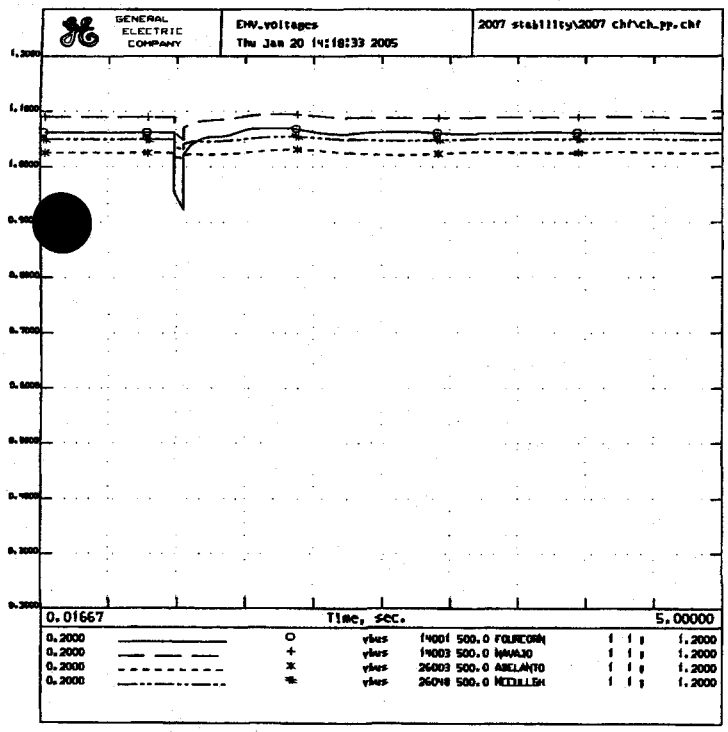

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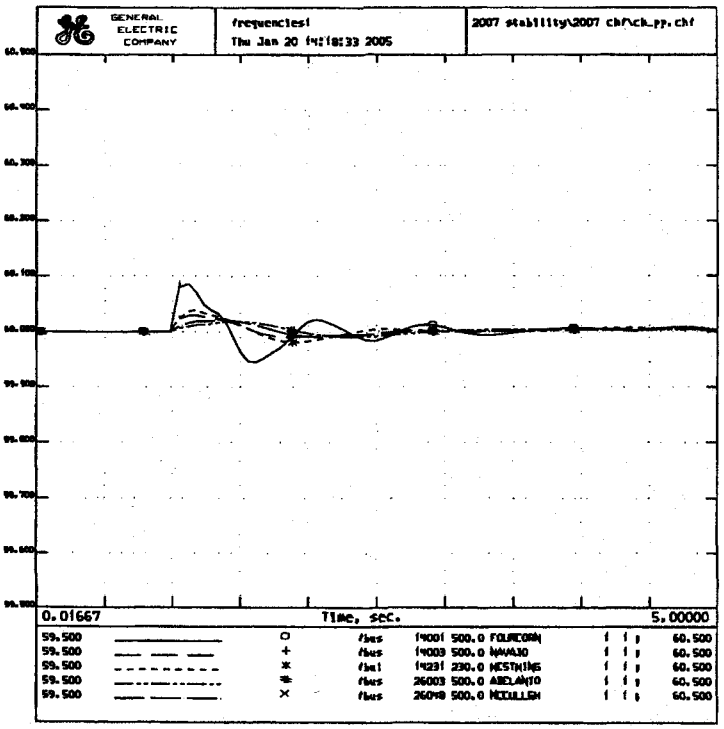
2007 Case for 10-Year Plan Stability



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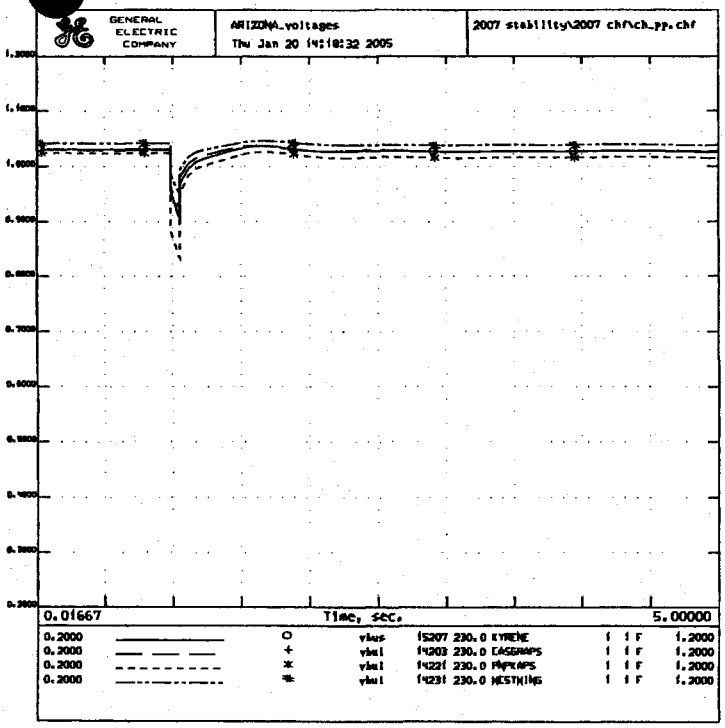

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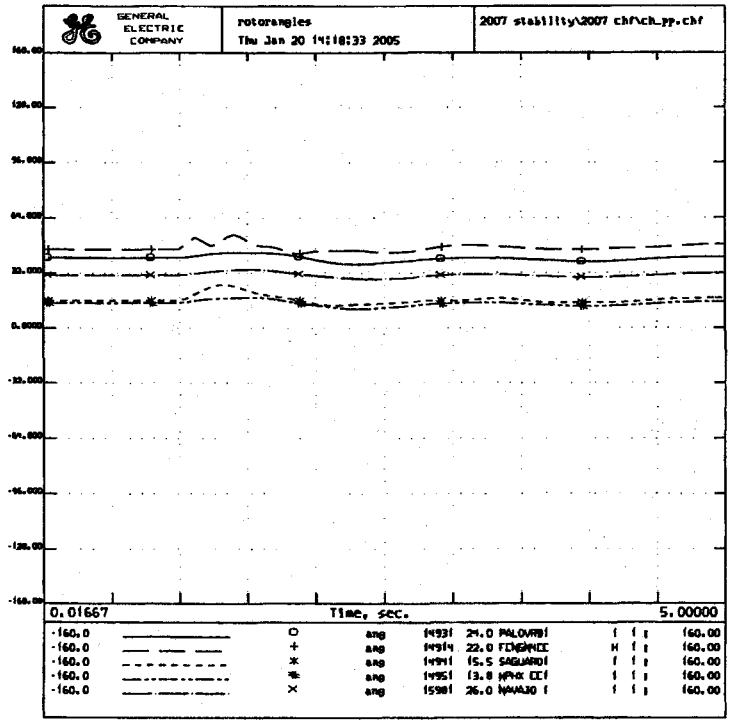

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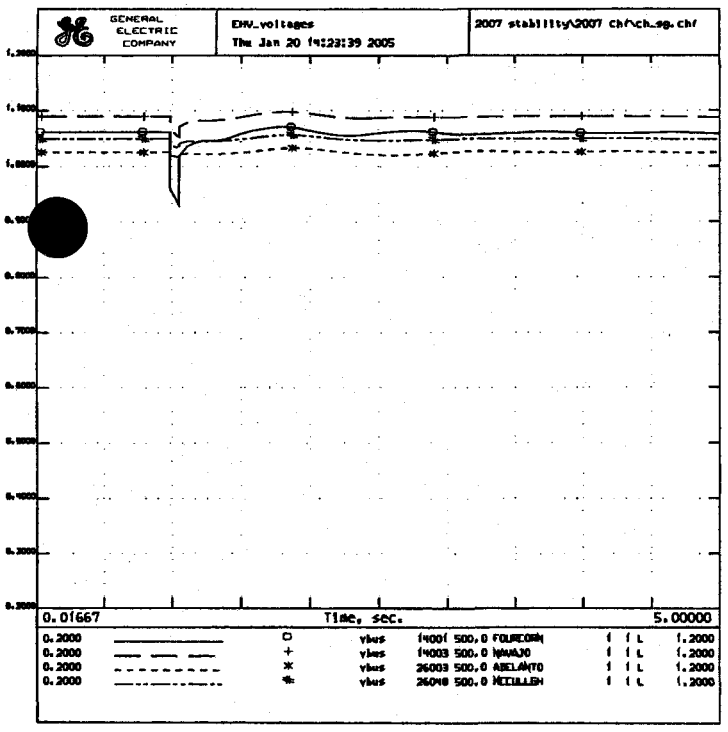

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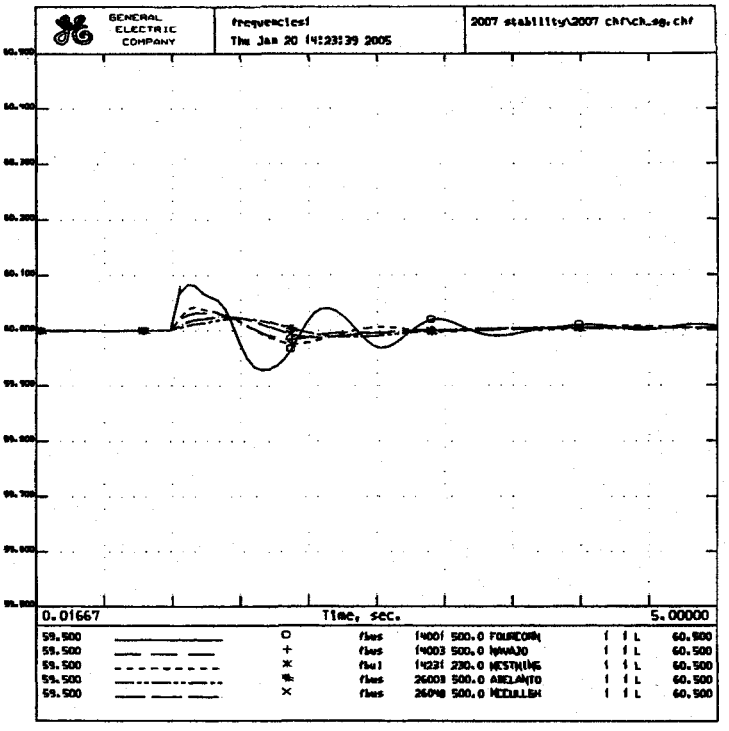
2007 Case for 10-Year Plan Stability



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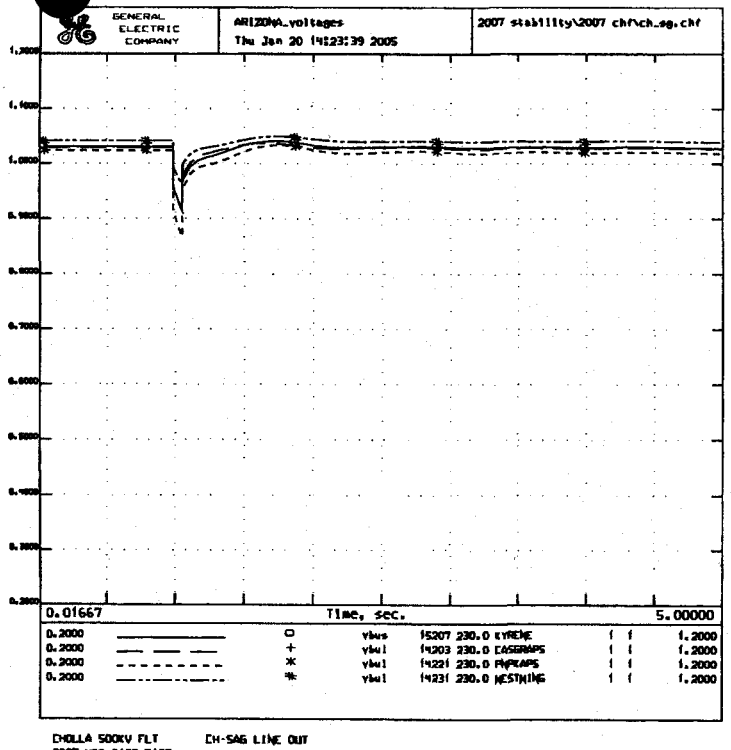

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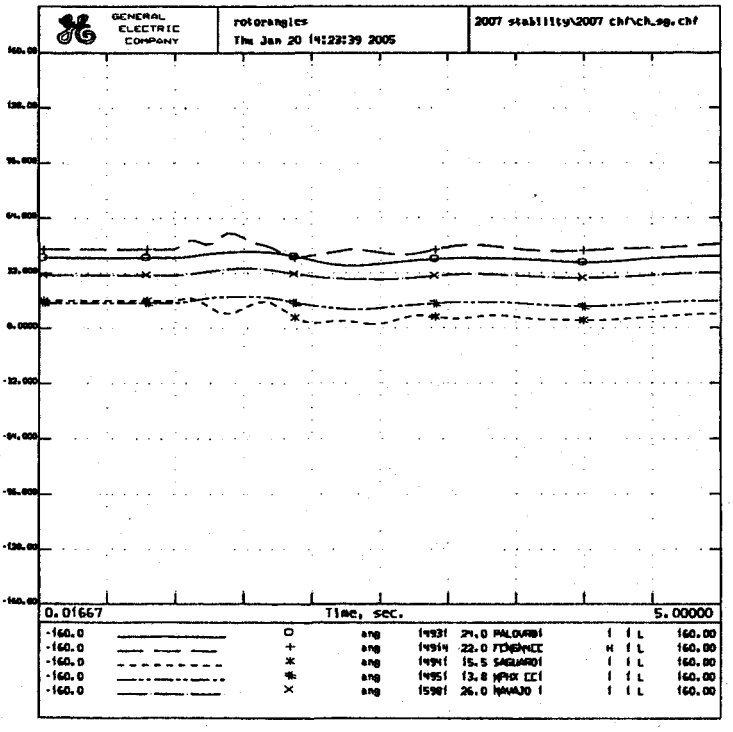

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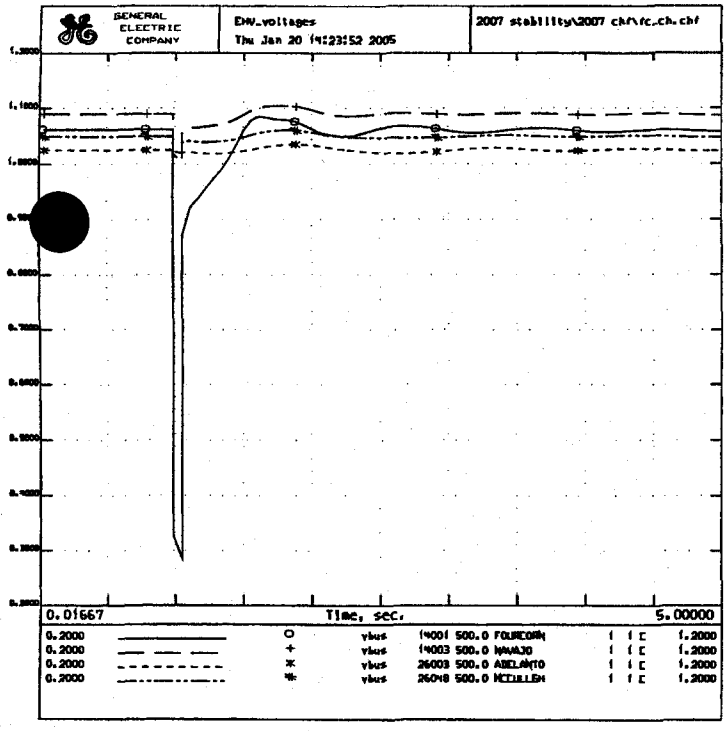
2007 Case for 10-Year Plan Stability



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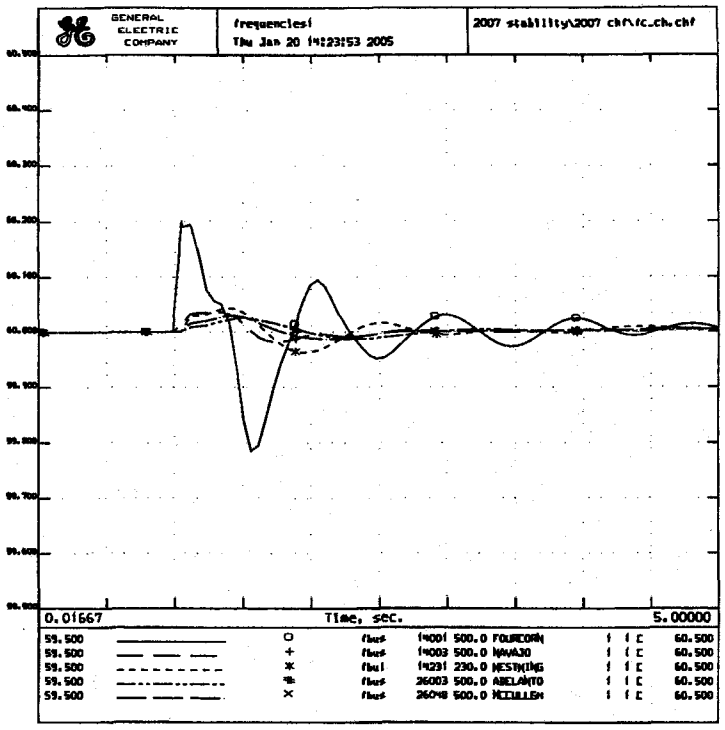
2007 Case for 10-Year Plan Stability



FOUR CORNERS 345kV fault FCN-CHOLLA line out
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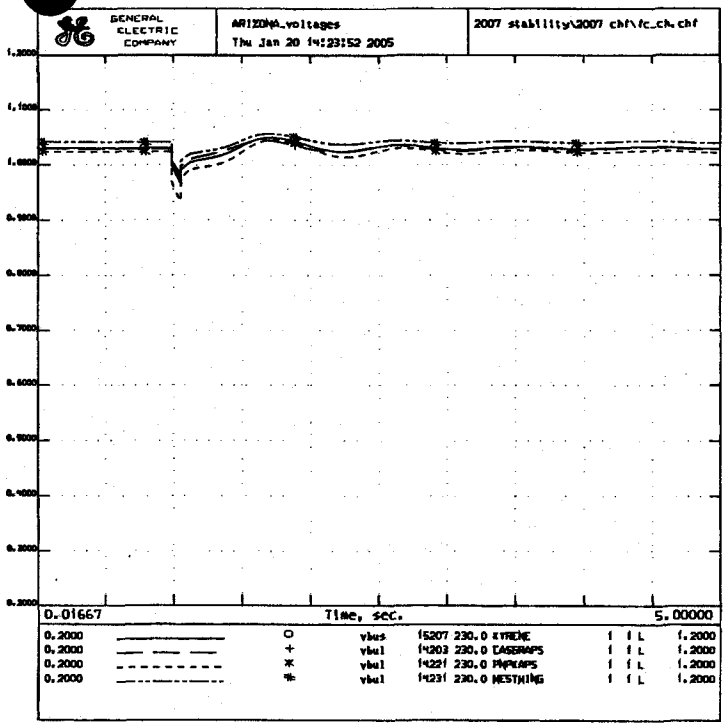
2007 Case for 10-Year Plan Stability



FOUR CORNERS 345kV fault FCN-CHOLLA line out
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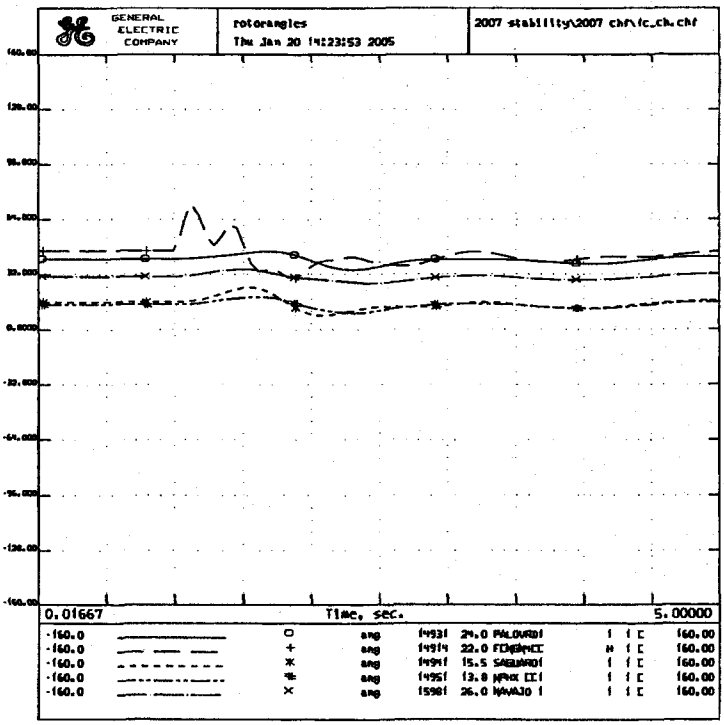
Case for 10-Year Plan Stability



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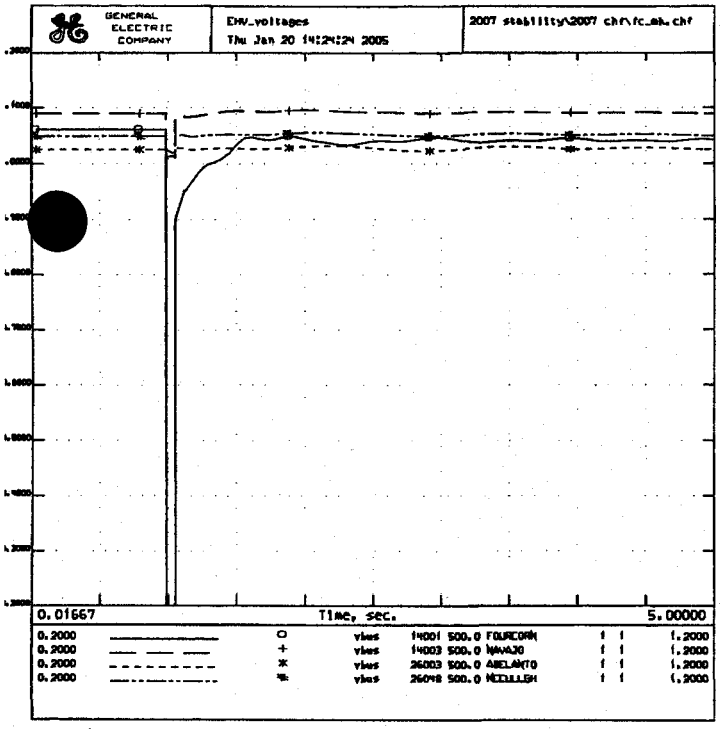
2007 Case for 10-Year Plan Stability



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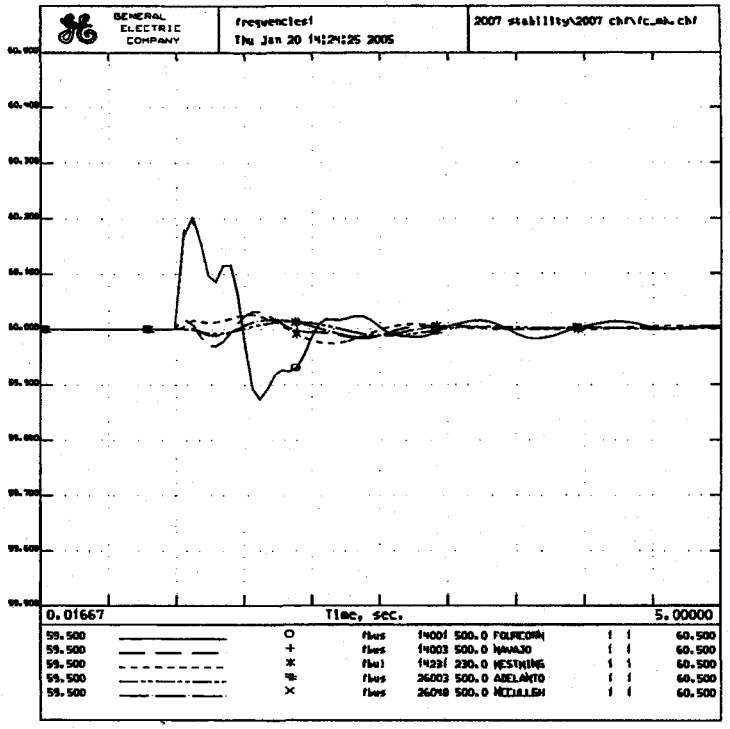
2007 Case for 10-Year Plan Stability



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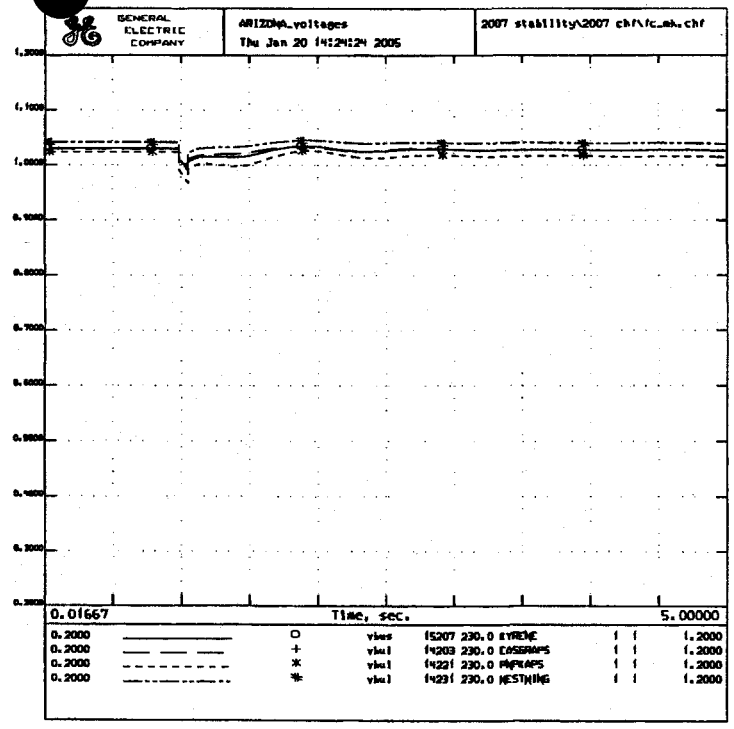
2007 Case for 10-Year Plan Stability



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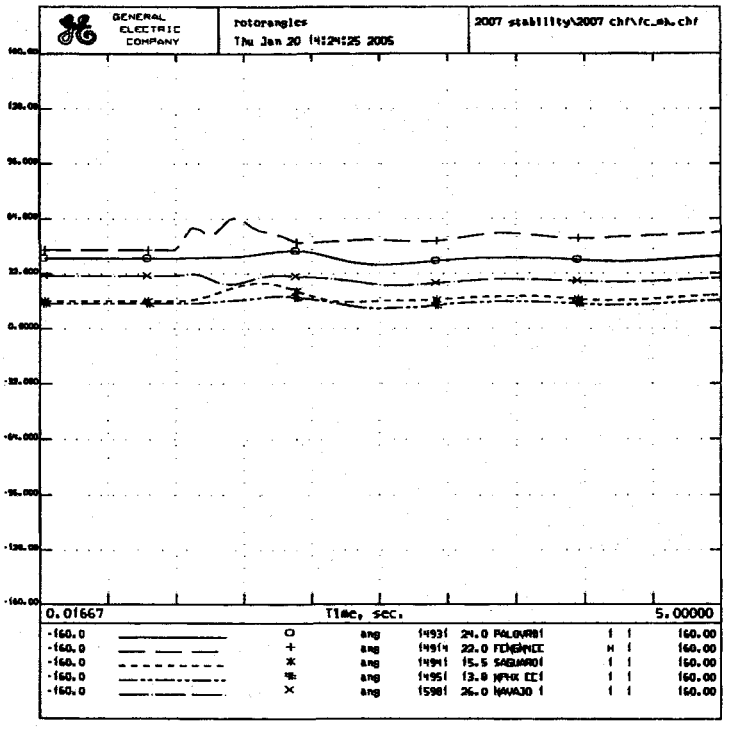
Case for 10-Year Plan Stability



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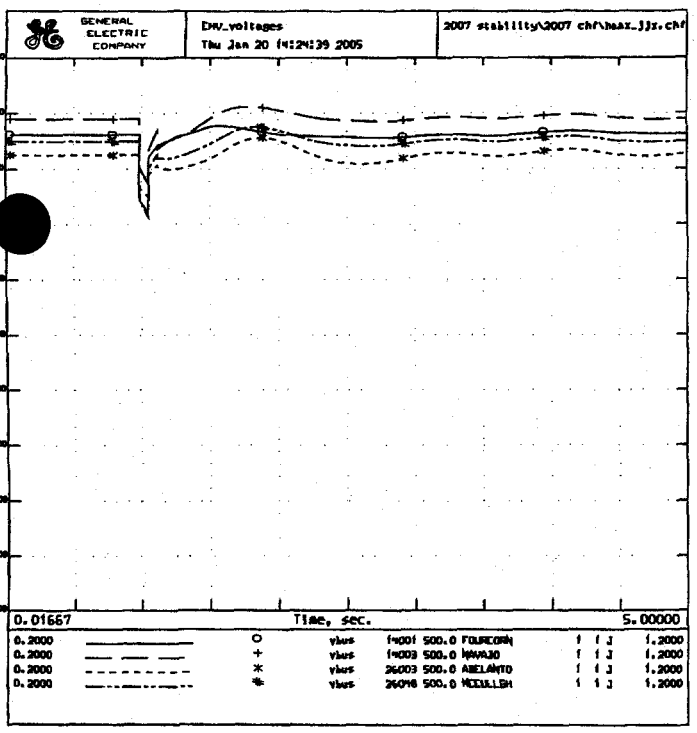
2007 Case for 10-Year Plan Stability



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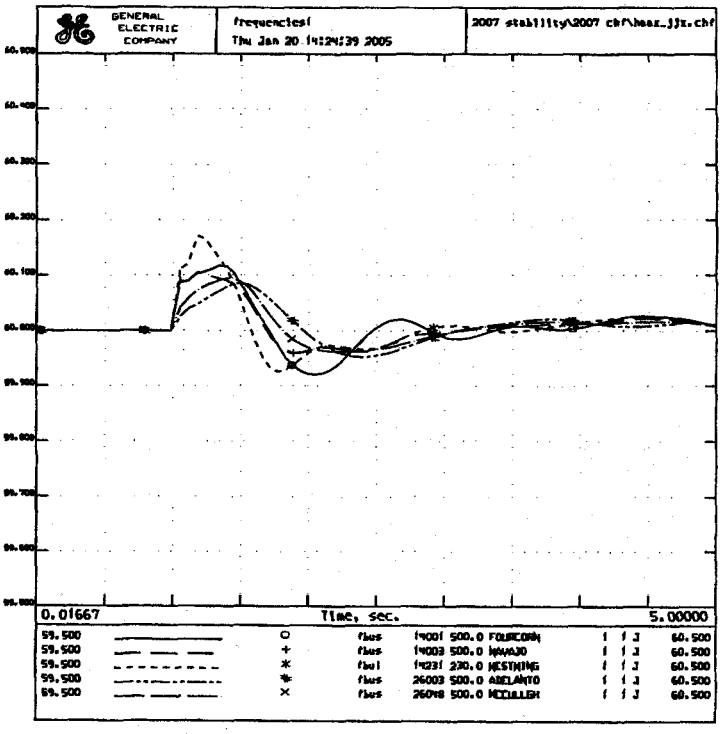
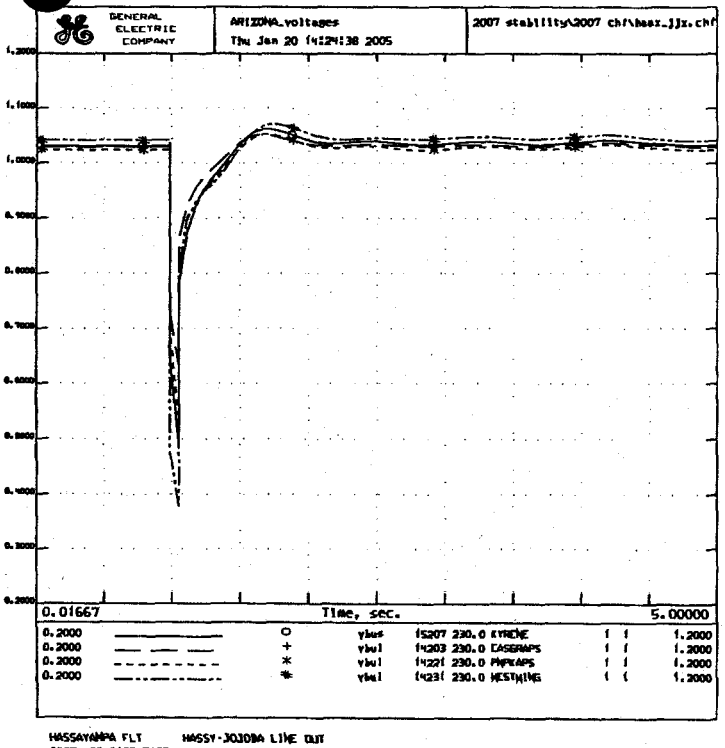
WAV-MEP/MEP-YAV,PV-DV/NG;4C CLR FLT W/HAAX-JJ;8C RE1N;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



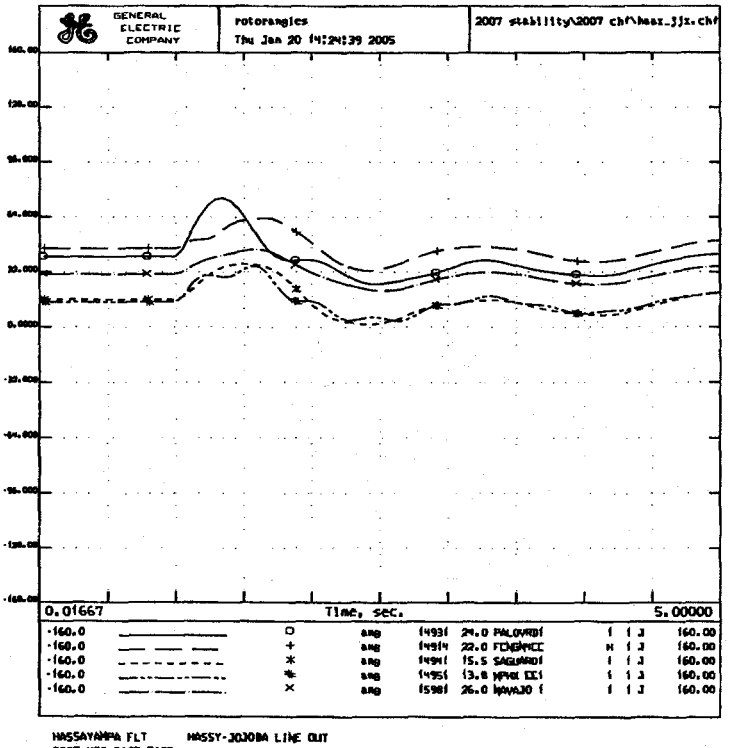
HASSAYAMPA FLT HASSY-JOJOBA LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
HAAX-JJ STAB ;(01/05; T+0 3P FLT HAAX500;10% FLT DMPING;FLSH CAPS
WAV-MEP/MEP-YAV,PV-DV/NG;4C CLR FLT W/HAAX-JJ;8C RE1N;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



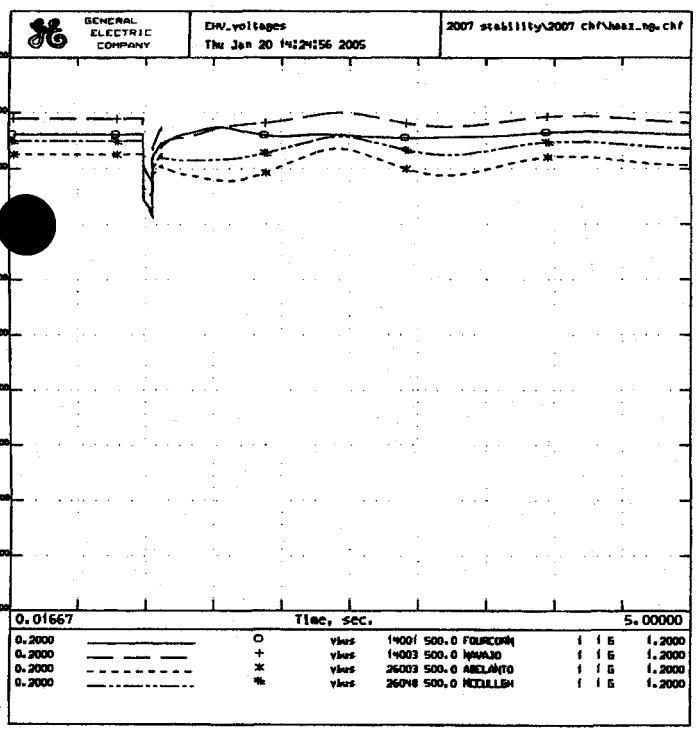
HASSAYAMPA FLT HASSY-JOJOBA LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
-JJ STAB ;(01/05; T+0 3P FLT HAAX500;10% FLT DMPING;FLSH CAPS
EP/MEP-YAV,PV-DV/NG;4C CLR FLT W/HAAX-JJ;8C RE1N;2007.dyd;HSCC.bpt

7 Case for 10-Year Plan Stability



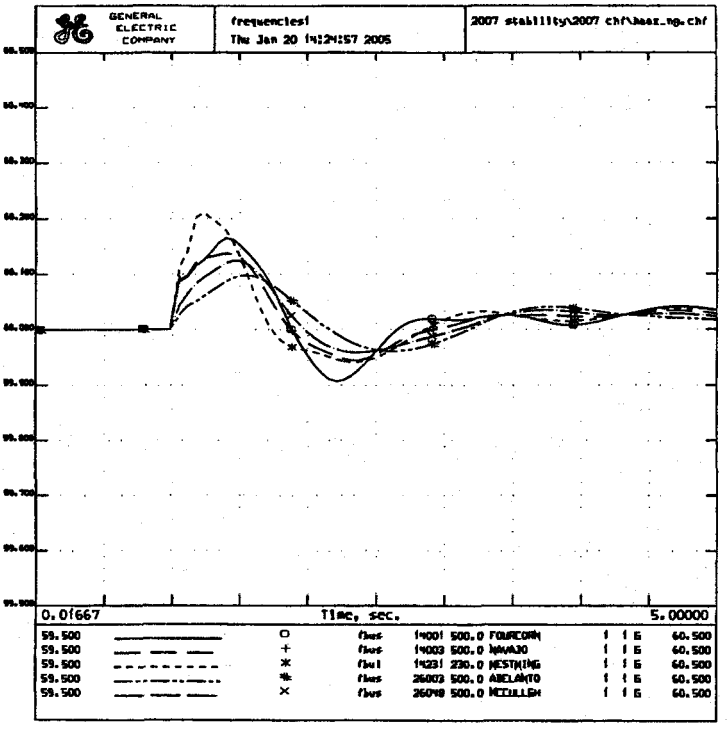
HASSAYAMPA FLT HASSY-JOJOBA LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
HAAX-JJ STAB ;(01/05; T+0 3P FLT HAAX500;10% FLT DMPING;FLSH CAPS
WAV-MEP/MEP-YAV,PV-DV/NG;4C CLR FLT W/HAAX-JJ;8C RE1N;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



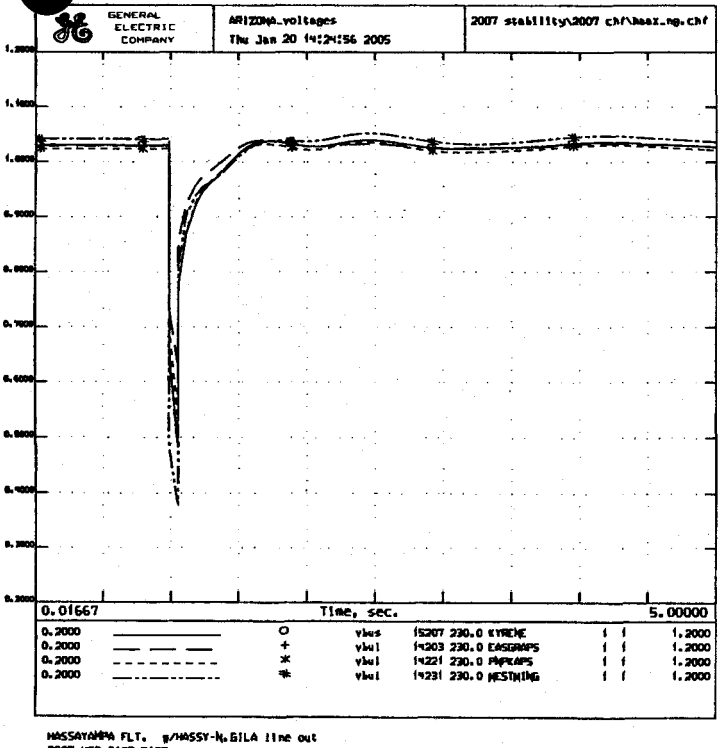
HASSAYAMPA FLT. g/HASSY-N.BILA line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
HAAX-NG STAB; 1/05; T-0 3P FLT HAAX500;10% FLT DMPING;FLSH CAPS
HAV-MKP/MKP-YAV,PV-DV/NG;4C CLR FLT H/HAAX-NG;8C REIN;2007.dyd;HSCC.bat

2007 Case for 10-Year Plan Stability



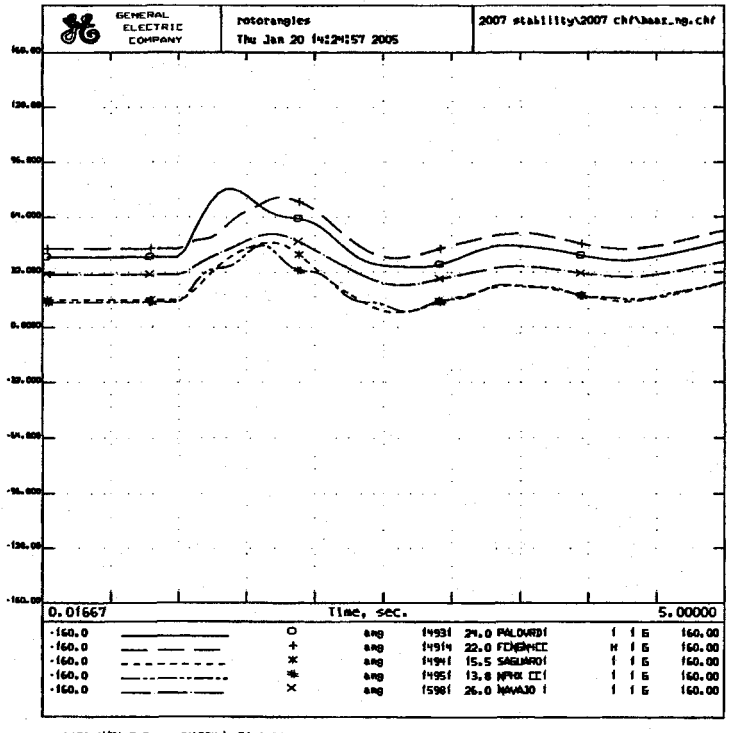
HASSAYAMPA FLT. g/HASSY-N.BILA line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
HAAX-NG STAB; 1/05; T-0 3P FLT HAAX500;10% FLT DMPING;FLSH CAPS
HAV-MKP/MKP-YAV,PV-DV/NG;4C CLR FLT H/HAAX-NG;8C REIN;2007.dyd;HSCC.bat

2007 Case for 10-Year Plan Stability



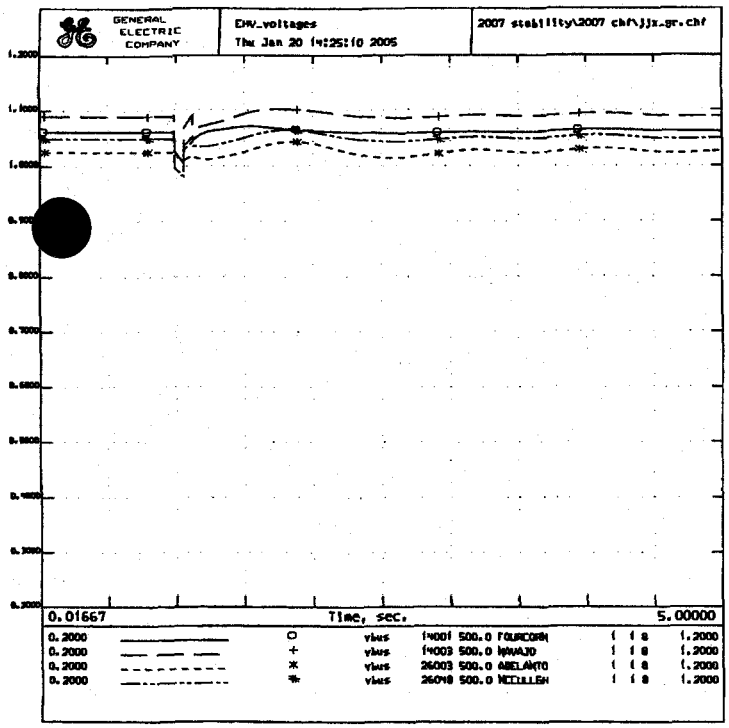
HASSAYAMPA FLT. g/HASSY-N.BILA line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible]-NG STAB; 1/05; T-0 3P FLT HAAX500;10% FLT DMPING;FLSH CAPS
[illegible]KP/MKP-YAV,PV-DV/NG;4C CLR FLT H/HAAX-NG;8C REIN;2007.dyd;HSCC.bat

[illegible] Case for 10-Year Plan Stability



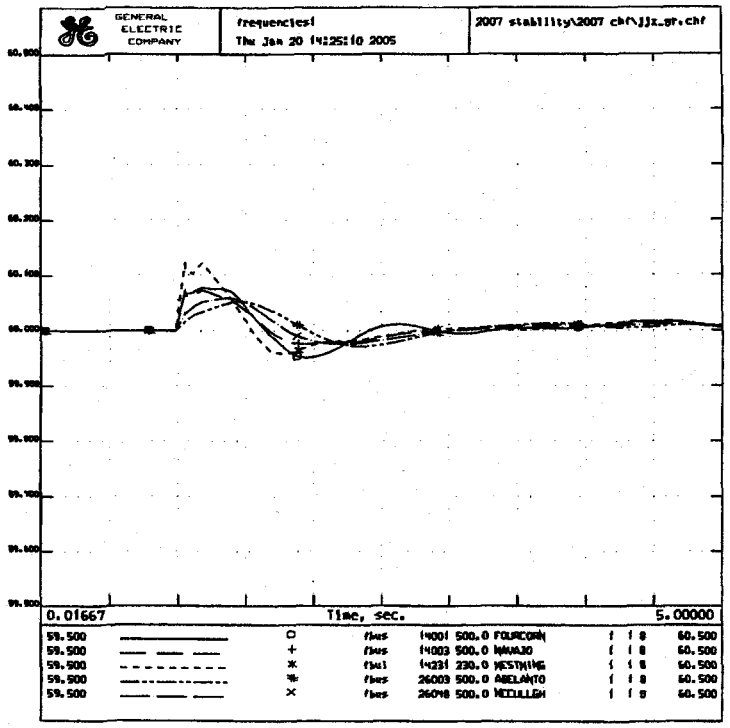
HASSAYAMPA FLT. g/HASSY-N.BILA line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
HAAX-NG STAB; 1/05; T-0 3P FLT HAAX500;10% FLT DMPING;FLSH CAPS
HAV-MKP/MKP-YAV,PV-DV/NG;4C CLR FLT H/HAAX-NG;8C REIN;2007.dyd;HSCC.bat

2007 Case for 10-Year Plan Stability



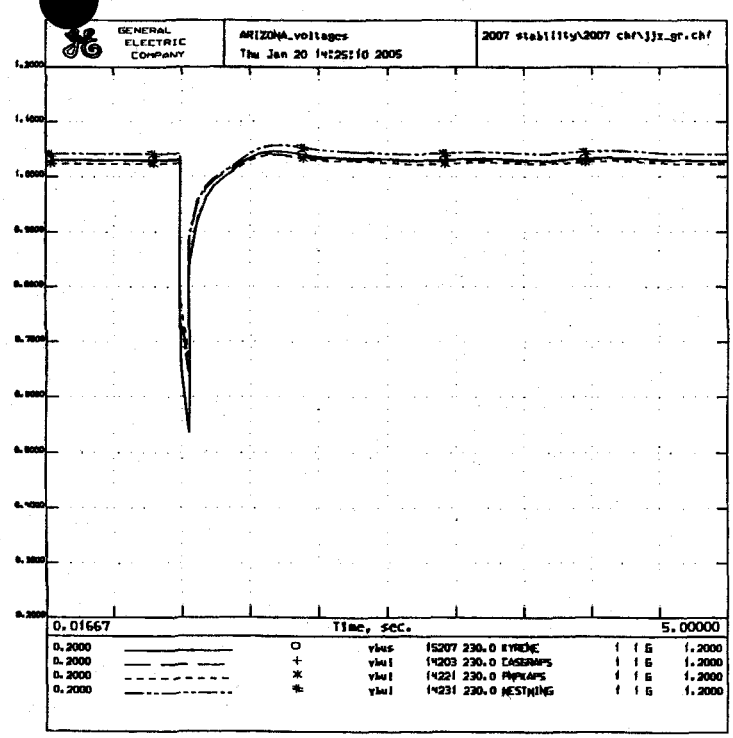
JOJOBA FLT JOJOBA-GILA RIVER LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-GR STAB sl; 01/05; T+0 3P FLT JJ500;10% FLT BMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/MG;4C CLR FLT W/JJ-GR;8C REIN;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



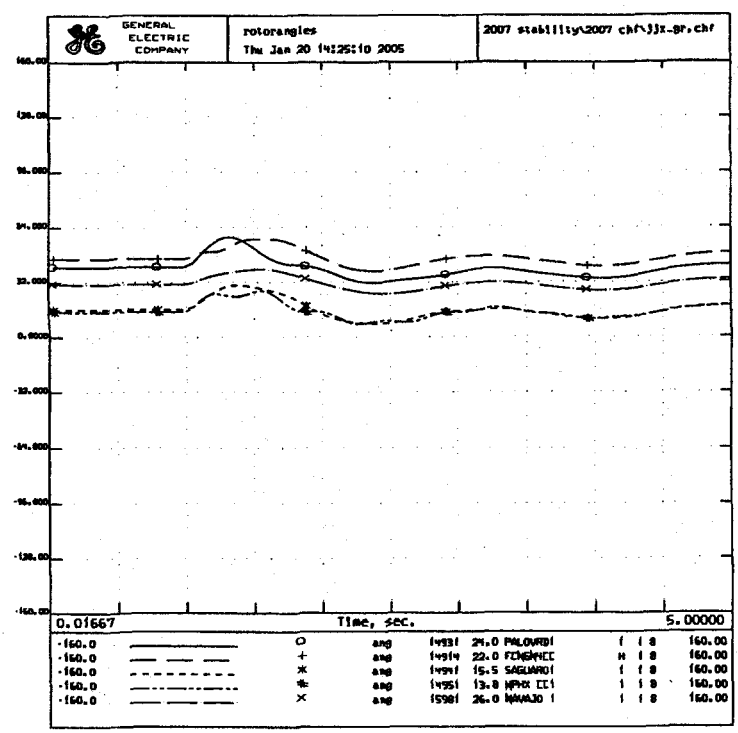
JOJOBA FLT JOJOBA-GILA RIVER LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-GR STAB sl; 01/05; T+0 3P FLT JJ500;10% FLT BMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/MG;4C CLR FLT W/JJ-GR;8C REIN;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



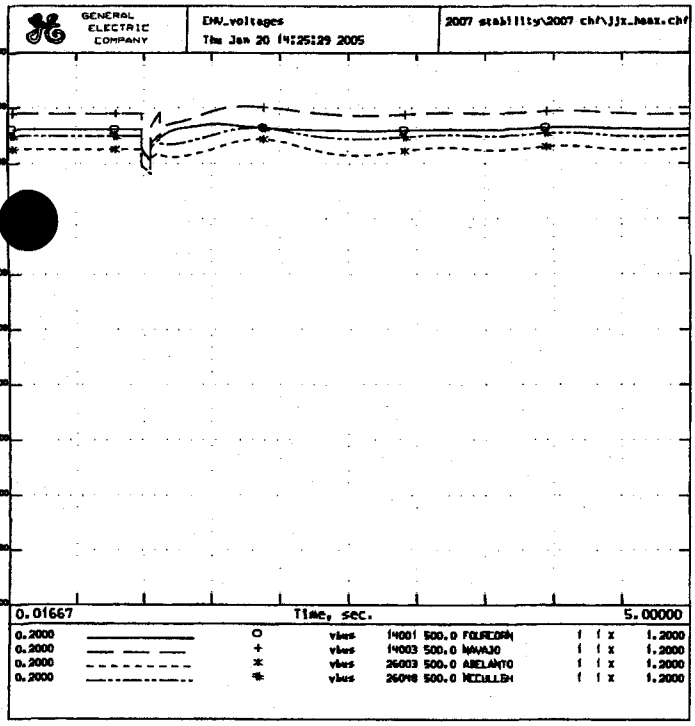
JOJOBA FLT JOJOBA-GILA RIVER LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
STAB sl; 01/05; T+0 3P FLT JJ500;10% FLT BMPING;FLSH CAPS
/MKP-YAV,PV-DV/MG;4C CLR FLT W/JJ-GR;8C REIN;2007.dyd;HSCC.bpt

ase for 10-Year Plan Stability



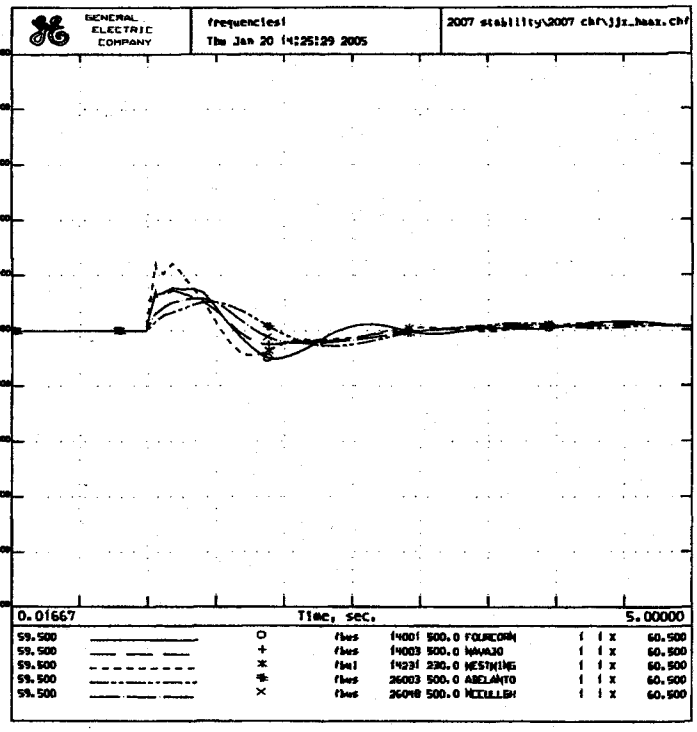
JOJOBA FLT JOJOBA-GILA RIVER LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-GR STAB sl; 01/05; T+0 3P FLT JJ500;10% FLT BMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/MG;4C CLR FLT W/JJ-GR;8C REIN;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



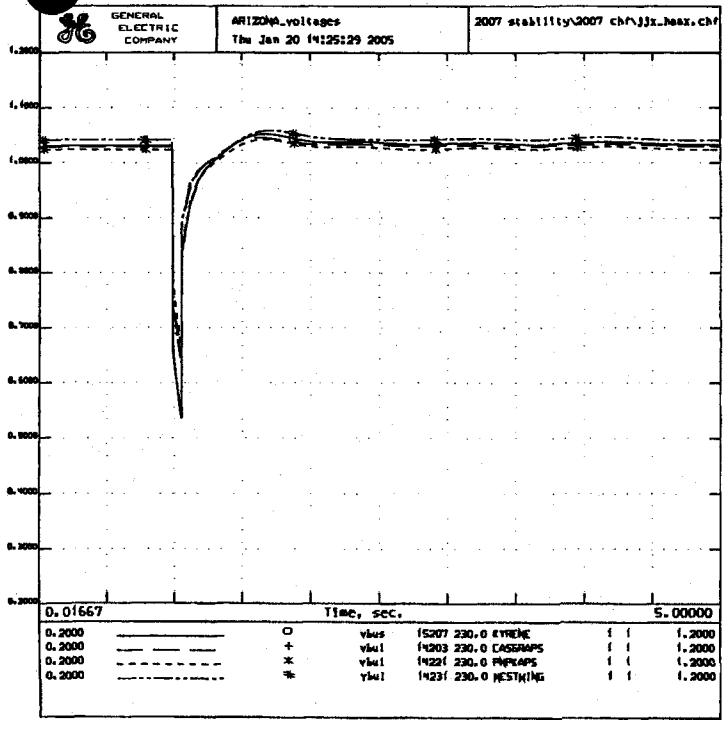
JOJOBA FLT JOJOBA-HASSY LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-HAAX STAB +|- 01/05; T=0 3P FLT JJ500;10% FLT BMPING;FLSH CAPS
NAV-MKP/MKP-YAV,PV-DV/NGS;4C CLR FLT W/JJ-HAAX;8C REIN;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



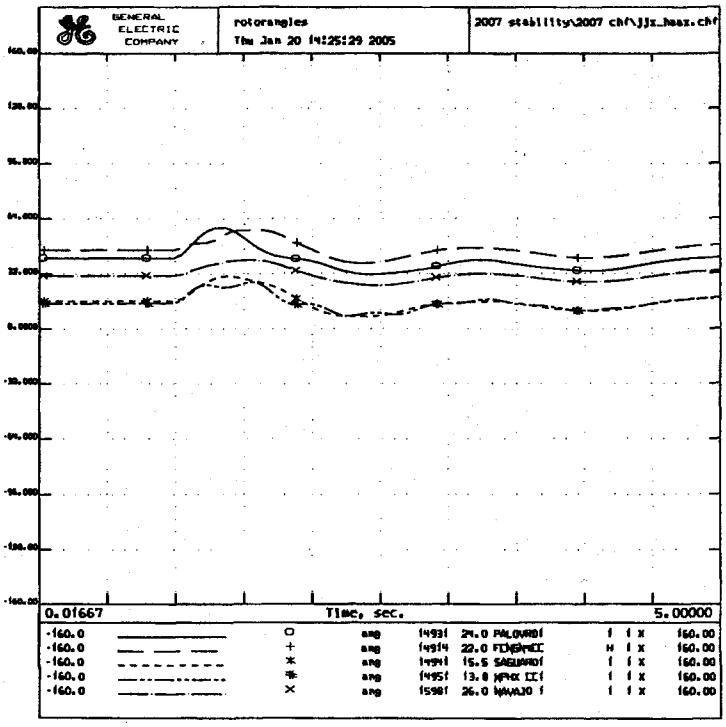
JOJOBA FLT JOJOBA-HASSY LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-HAAX STAB +|- 01/05; T=0 3P FLT JJ500;10% FLT BMPING;FLSH CAPS
NAV-MKP/MKP-YAV,PV-DV/NGS;4C CLR FLT W/JJ-HAAX;8C REIN;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



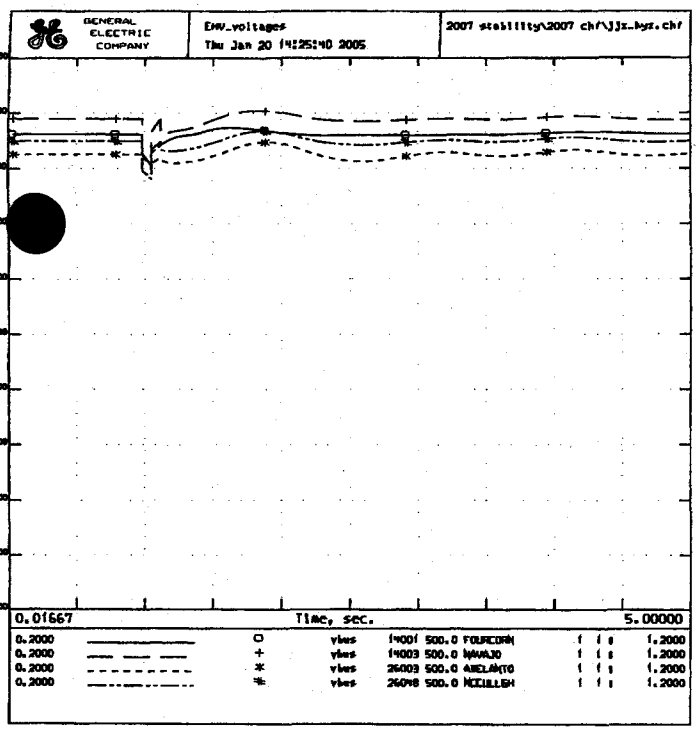
JOJOBA FLT JOJOBA-HASSY LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible]AAX STAB +|- 01/05; T=0 3P FLT JJ500;10% FLT BMPING;FLSH CAPS
[illegible]P/MKP-YAV,PV-DV/NGS;4C CLR FLT W/JJ-HAAX;8C REIN;2007.dyd;HSCC.bpt

[illegible]Case for 10-Year Plan Stability



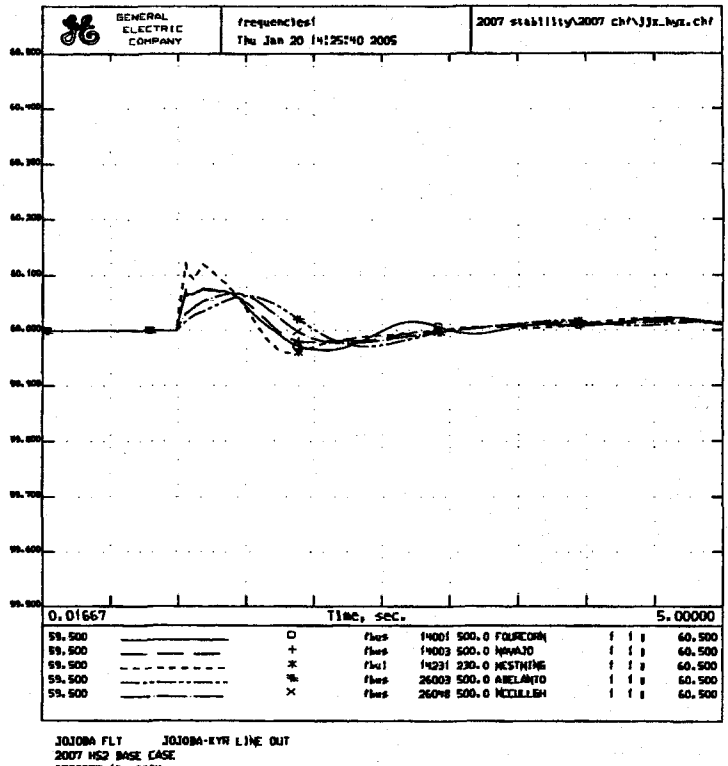
JOJOBA FLT JOJOBA-HASSY LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-HAAX STAB +|- 01/05; T=0 3P FLT JJ500;10% FLT BMPING;FLSH CAPS
NAV-MKP/MKP-YAV,PV-DV/NGS;4C CLR FLT W/JJ-HAAX;8C REIN;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



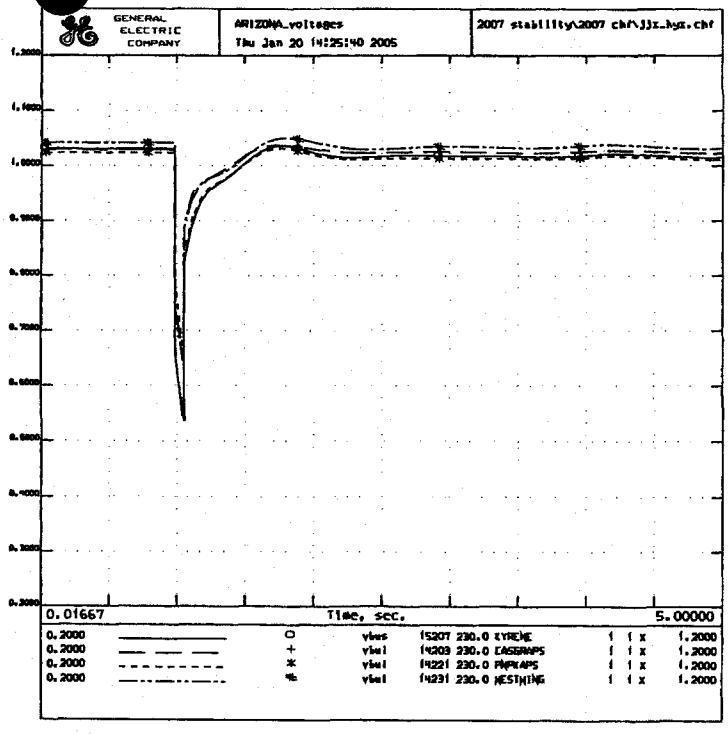
JOJOBA FLT JOJOBA-KYR LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-KYR STAB ofg 01/05g T=0 3P FLT JJ500g10% FLT DMPINGgFLSH CAPS
MAV-MKP/MKP-YAV,PV-DV/MGg4C CLR FLT M/JJ-KYRg8C REINg2007.dydgMSCC.bpt

2007 Case for 10-Year Plan Stability



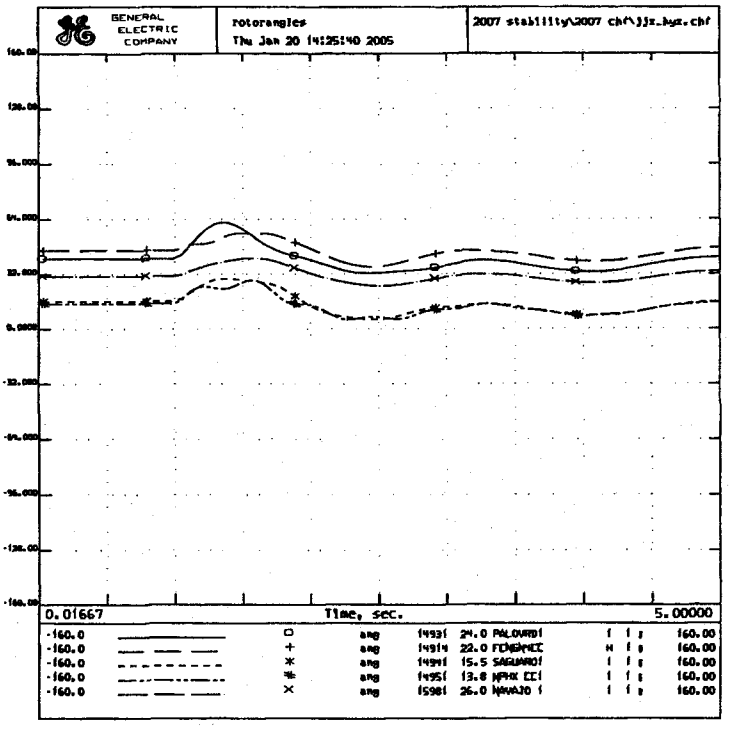
JOJOBA FLT JOJOBA-KYR LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-KYR STAB ofg 01/05g T=0 3P FLT JJ500g10% FLT DMPINGgFLSH CAPS
MAV-MKP/MKP-YAV,PV-DV/MGg4C CLR FLT M/JJ-KYRg8C REINg2007.dydgMSCC.bpt

2007 Case for 10-Year Plan Stability



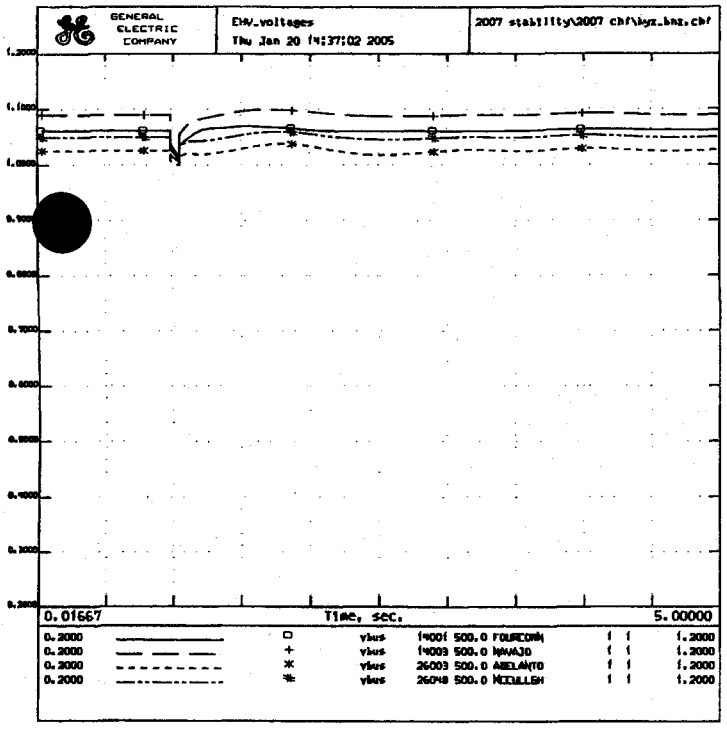
JOJOBA FLT JOJOBA-KYR LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
STAB ofg 01/05g T=0 3P FLT JJ500g10% FLT DMPINGgFLSH CAPS
P/MKP-YAV,PV-DV/MGg4C CLR FLT M/JJ-KYRg8C REINg2007.dydgMSCC.bpt

Case for 10-Year Plan Stability



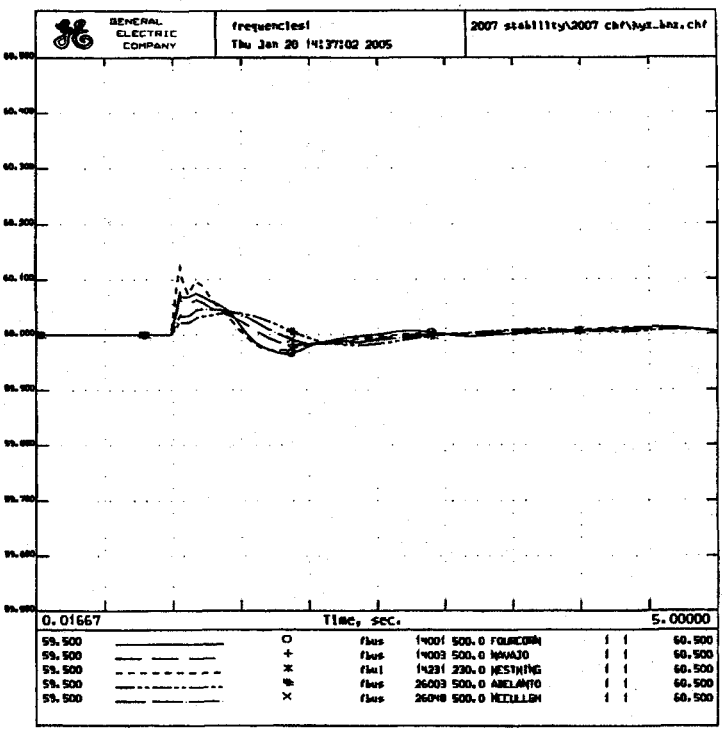
JOJOBA FLT JOJOBA-KYR LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
JJ-KYR STAB ofg 01/05g T=0 3P FLT JJ500g10% FLT DMPINGgFLSH CAPS
MAV-MKP/MKP-YAV,PV-DV/MGg4C CLR FLT M/JJ-KYRg8C REINg2007.dydgMSCC.bpt

2007 Case for 10-Year Plan Stability



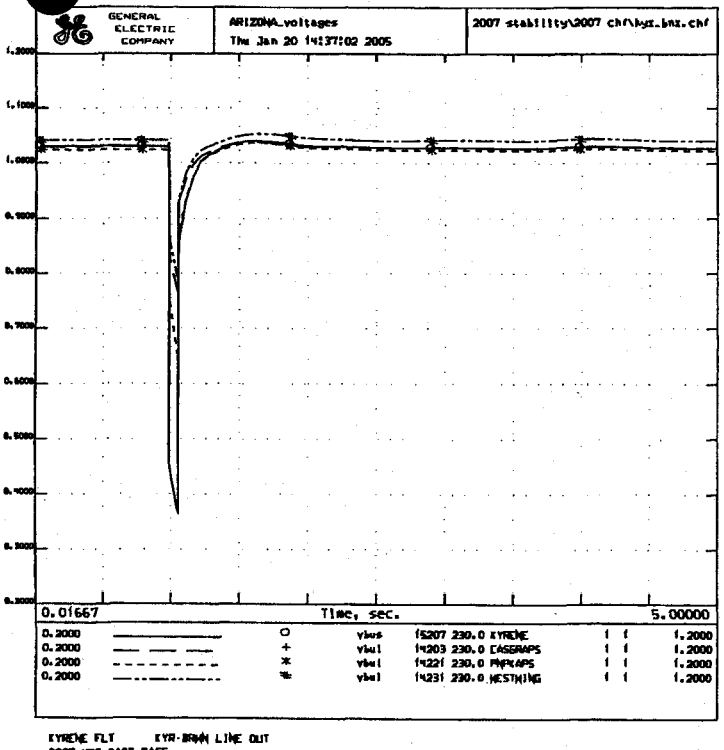
KYRENE FLT KYR-BRAM LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
KYR-BRAM STAB .if 01/05; T+0 3P FLT KYR500;
+C CLR FLT M/BRAM-KYR;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



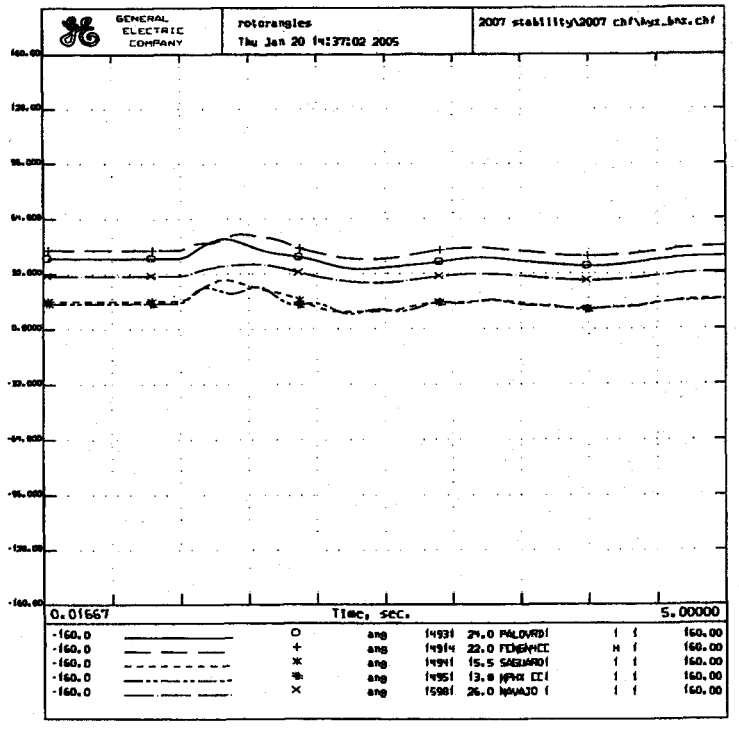
KYRENE FLT KYR-BRAM LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
KYR-BRAM STAB .if 01/05; T+0 3P FLT KYR500;
+C CLR FLT M/BRAM-KYR;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



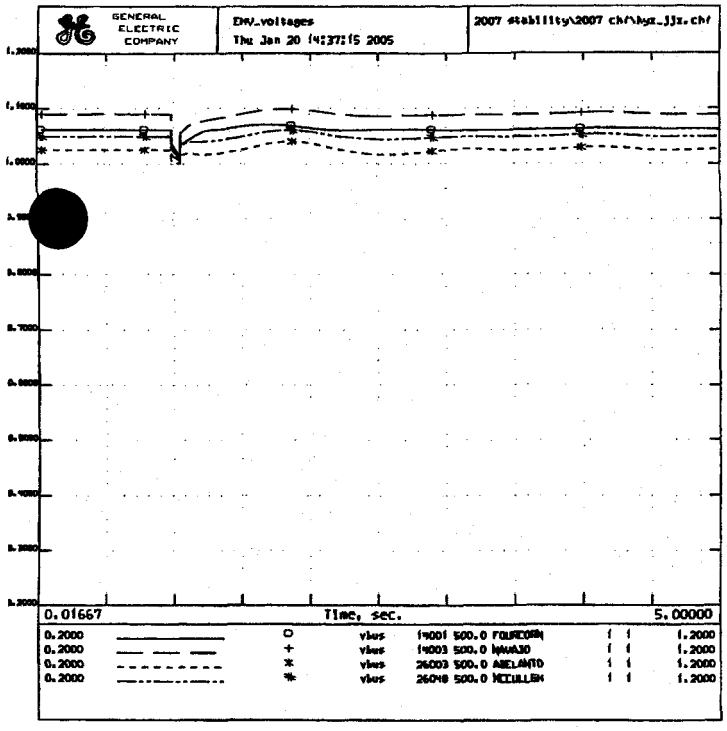
KYRENE FLT KYR-BRAM LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
[redacted]BRAM STAB .if 01/05; T+0 3P FLT KYR500;
[redacted] FLT M/BRAM-KYR;2007.dyd;HSCC.bpt

[redacted] Case for 10-Year Plan Stability



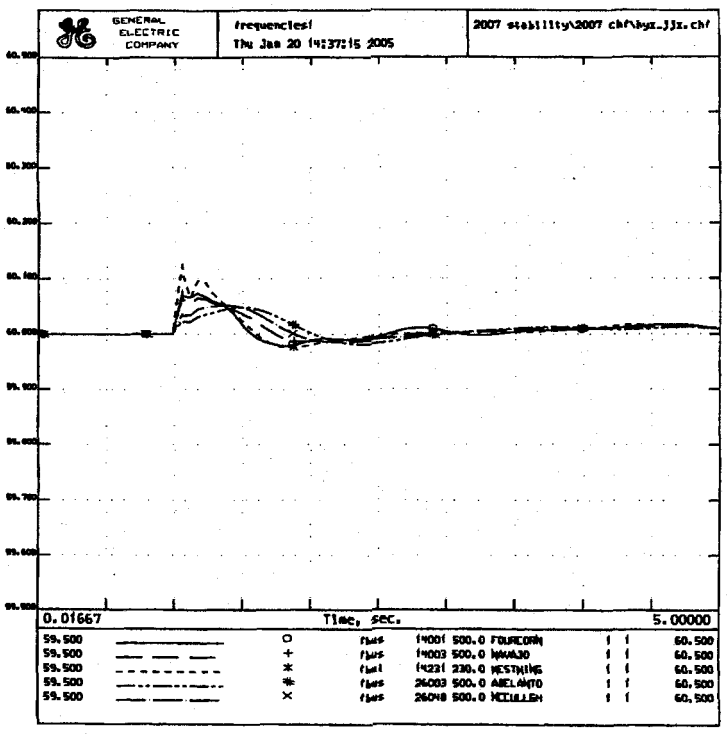
KYRENE FLT KYR-BRAM LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
KYR-BRAM STAB .if 01/05; T+0 3P FLT KYR500;
+C CLR FLT M/BRAM-KYR;2007.dyd;HSCC.bpt

2007 Case for 10-Year Plan Stability



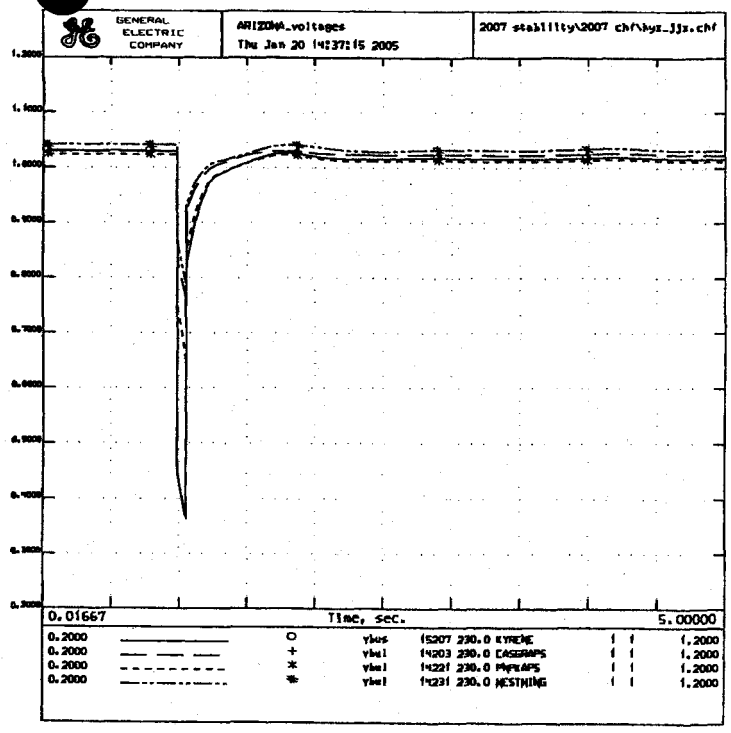
KYRENE FLT KYR-JOJOBA LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
KYR-JJ STAB +(; 01/05; T+0 3P FLT KYR500;
%C CLR FLT M/JJ-KYR;2007.dyd;MSCC.bpt

2007 Case for 10-Year Plan Stability



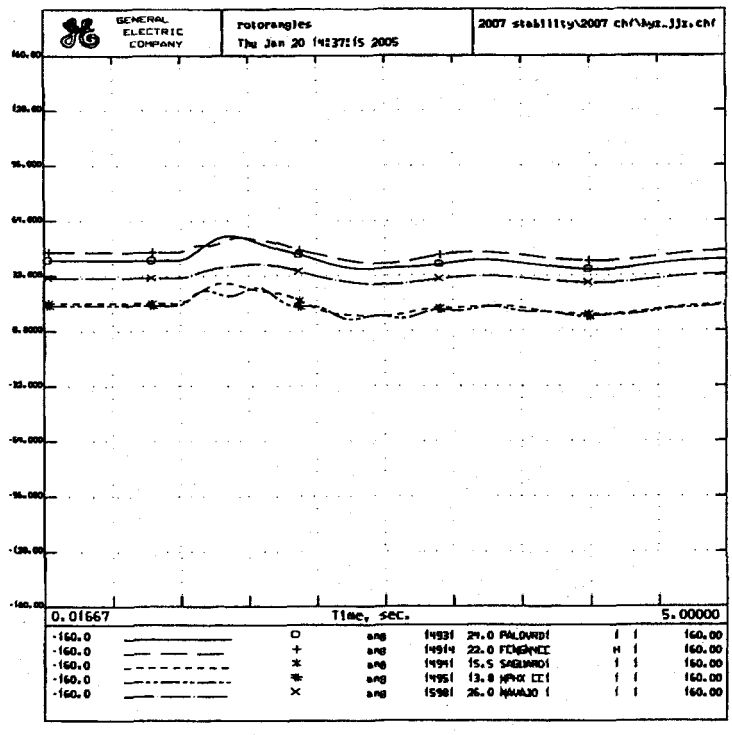
KYRENE FLT KYR-JOJOBA LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
KYR-JJ STAB +(; 01/05; T+0 3P FLT KYR500;
%C CLR FLT M/JJ-KYR;2007.dyd;MSCC.bpt

2007 Case for 10-Year Plan Stability



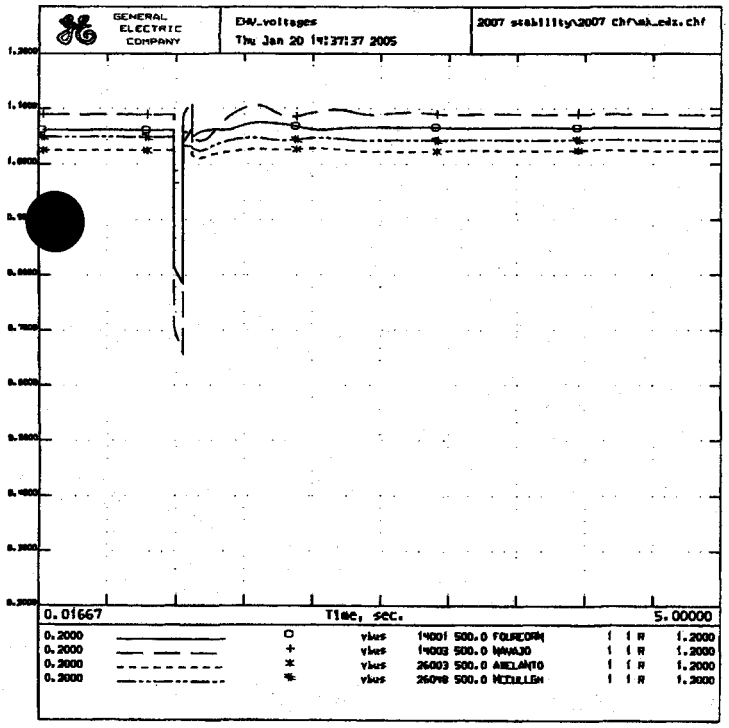
KYRENE FLT KYR-JOJOBA LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible] STAB +(; 01/05; T+0 3P FLT KYR500;
[illegible] FLT M/JJ-KYR;2007.dyd;MSCC.bpt

[illegible] Case for 10-Year Plan Stability



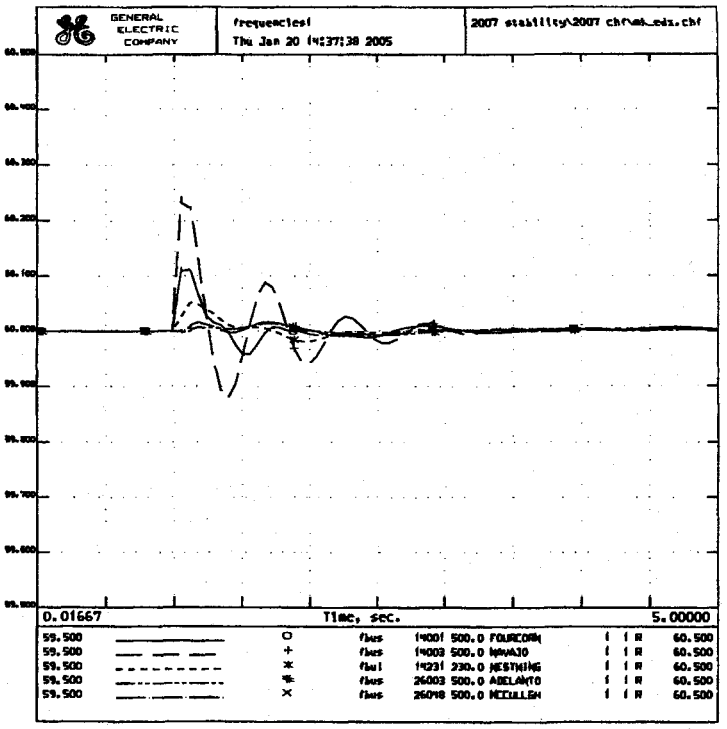
KYRENE FLT KYR-JOJOBA LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
KYR-JJ STAB +(; 01/05; T+0 3P FLT KYR500;
%C CLR FLT M/JJ-KYR;2007.dyd;MSCC.bpt

2007 Case for 10-Year Plan Stability



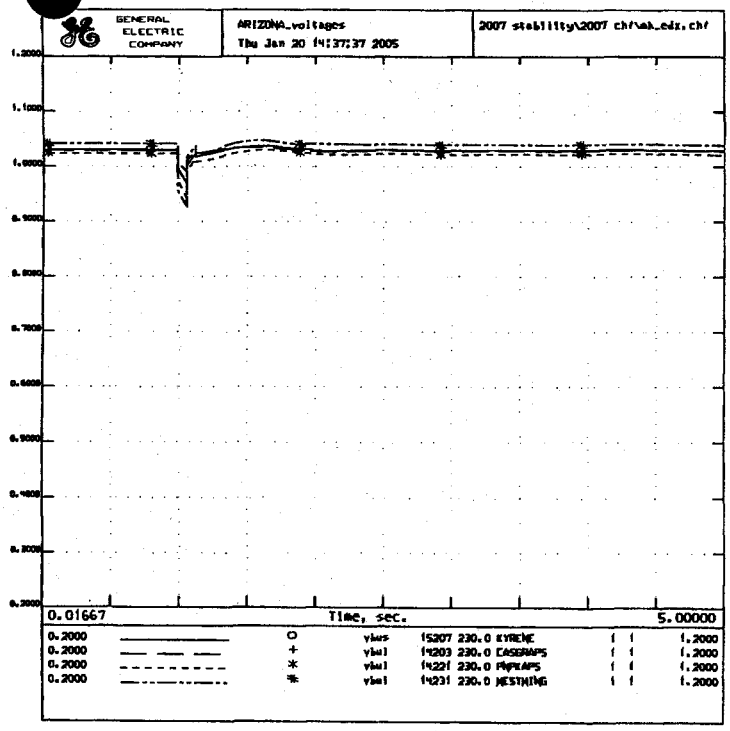
MKP FLT, MKP-ELD line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MKP-ELD STAB; 1/05; T=0 3P FLT MKP500;FLSH CAPS MKP-YAV/YAV-MAG,
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/MKP-ELD;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



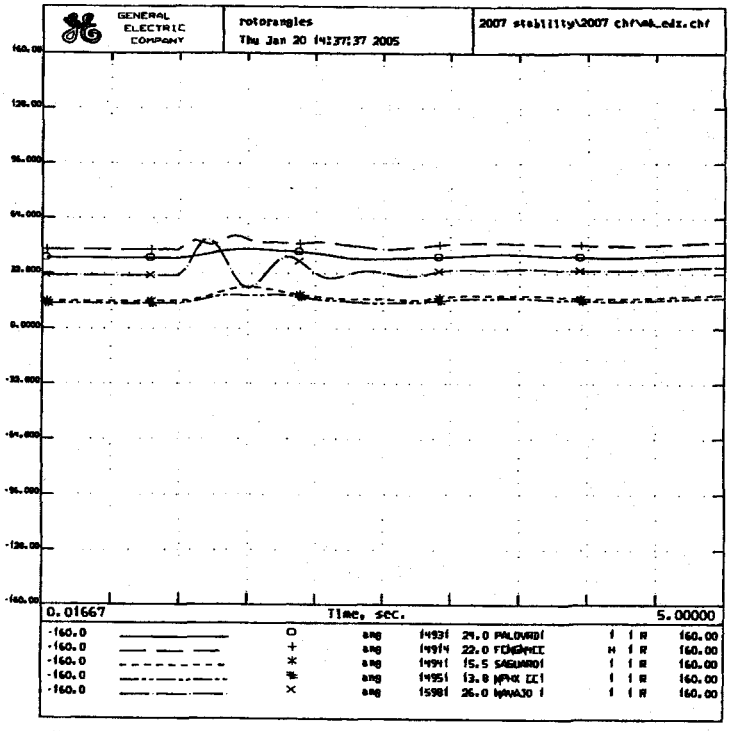
MKP FLT, MKP-ELD line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MKP-ELD STAB; 1/05; T=0 3P FLT MKP500;FLSH CAPS MKP-YAV/YAV-MAG,
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/MKP-ELD;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



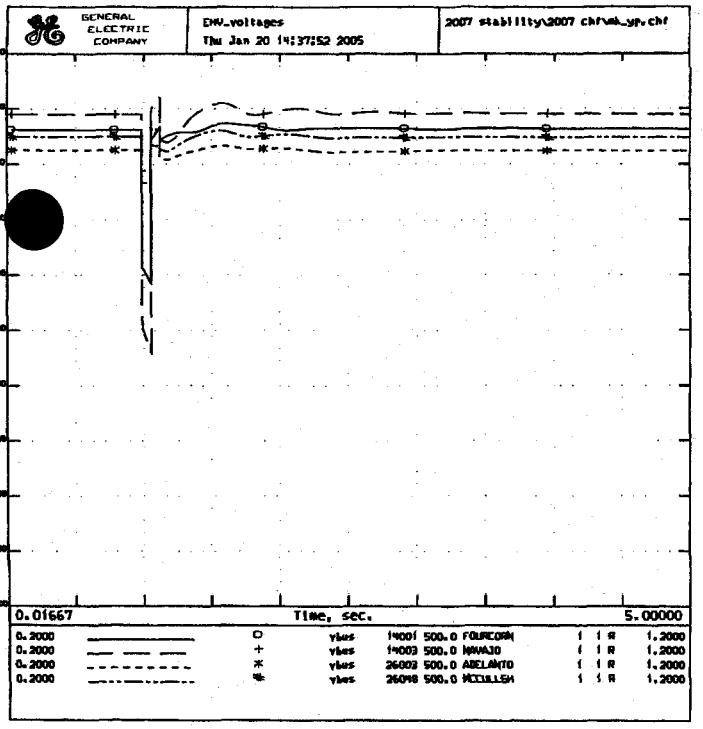
MKP FLT, MKP-ELD line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
ELD STAB; 1/05; T=0 3P FLT MKP500;FLSH CAPS MKP-YAV/YAV-MAG,
CC/MKP,MKP-ELD;4C CLR FLT N/MKP-ELD;8C RE1N;2007.dyd;MSCC.bat

Case for 10-Year Plan Stability



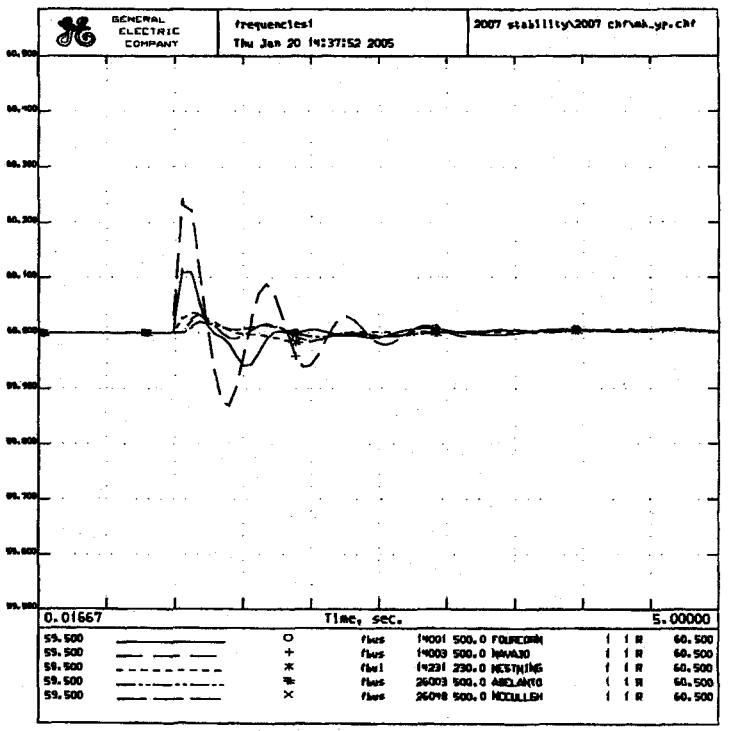
MKP FLT, MKP-ELD line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MKP-ELD STAB; 1/05; T=0 3P FLT MKP500;FLSH CAPS MKP-YAV/YAV-MAG,
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/MKP-ELD;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



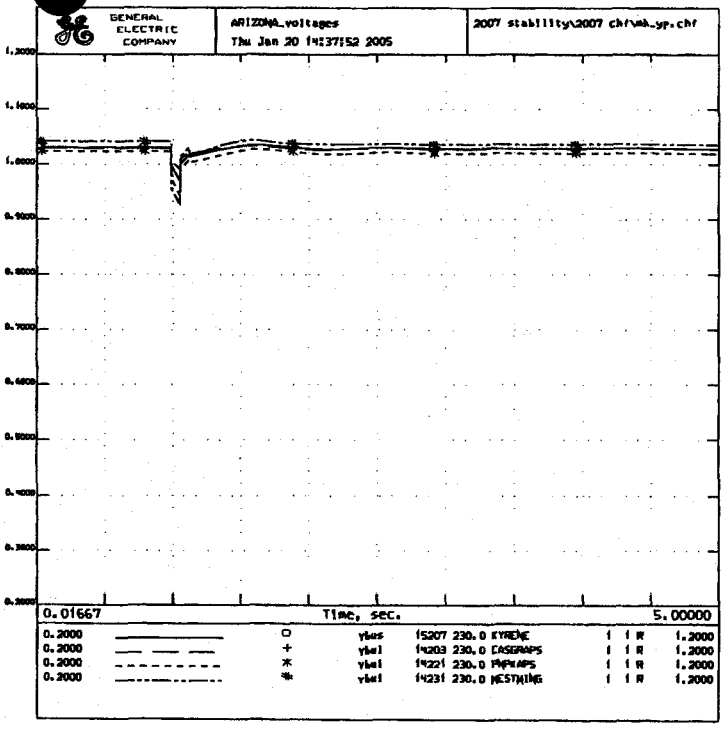
MOEN(KOP) FLT MKP-YAV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MKP-YAV STAB; 1/05; T+0 3P FLT MKP500;FLSH CAPS MKP-YAV/YAV-MMG,
NAV-MCC/MKP,MKP-ELD;4C CLR FLT M/MKP-YAV;BC RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



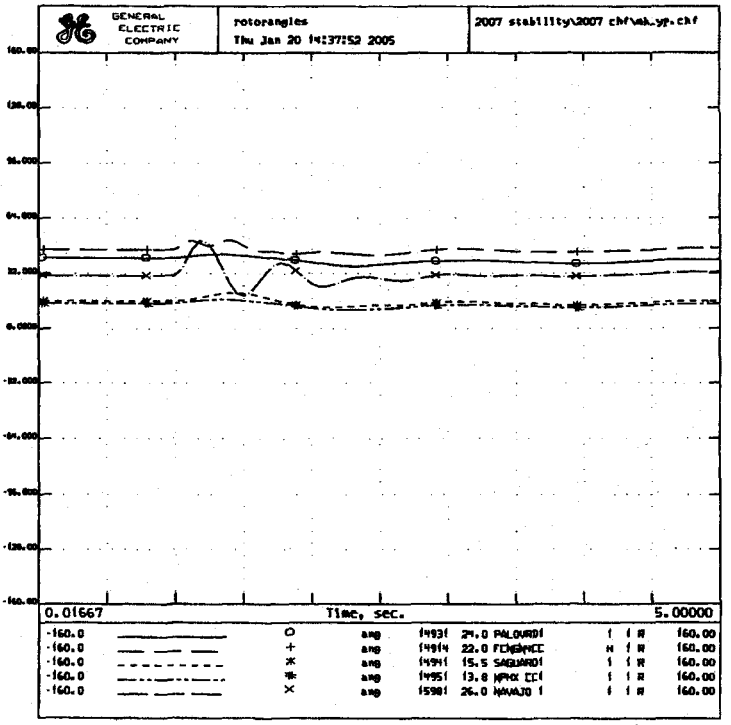
MOEN(KOP) FLT MKP-YAV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MKP-YAV STAB; 1/05; T+0 3P FLT MKP500;FLSH CAPS MKP-YAV/YAV-MMG,
NAV-MCC/MKP,MKP-ELD;4C CLR FLT M/MKP-YAV;BC RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



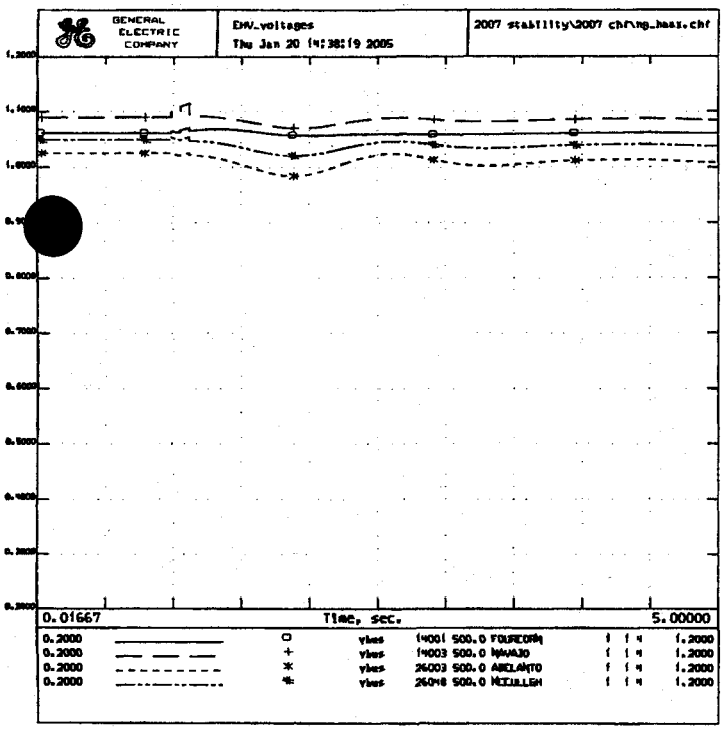
MOEN(KOP) FLT MKP-YAV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible]AV STAB; 1/05; T+0 3P FLT MKP500;FLSH CAPS MKP-YAV/YAV-MMG,
[illegible]C/MKP,MKP-ELD;4C CLR FLT M/MKP-YAV;BC RE1N;2007.dyd;MSCC.bat

[illegible]ase for 10-Year Plan Stability



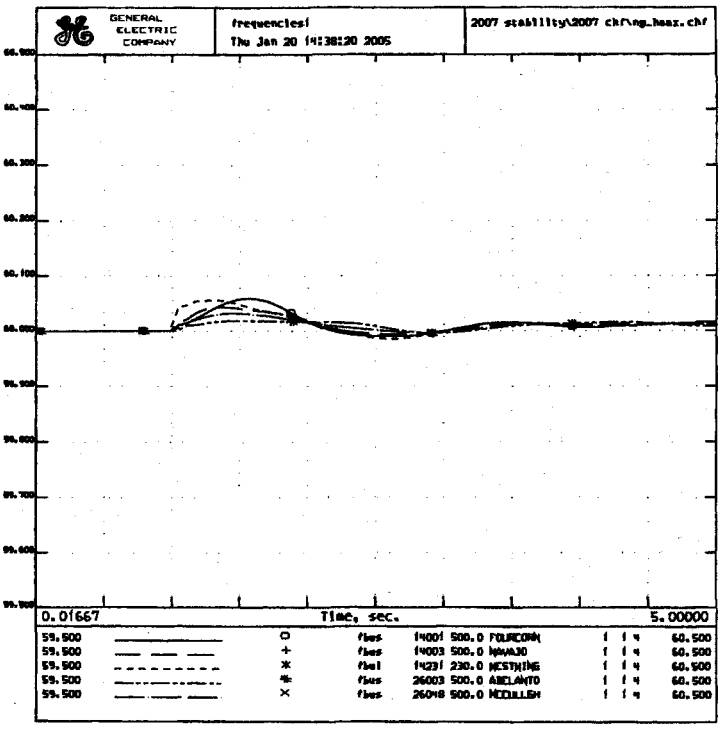
MOEN(KOP) FLT MKP-YAV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MKP-YAV STAB; 1/05; T+0 3P FLT MKP500;FLSH CAPS MKP-YAV/YAV-MMG,
NAV-MCC/MKP,MKP-ELD;4C CLR FLT M/MKP-YAV;BC RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



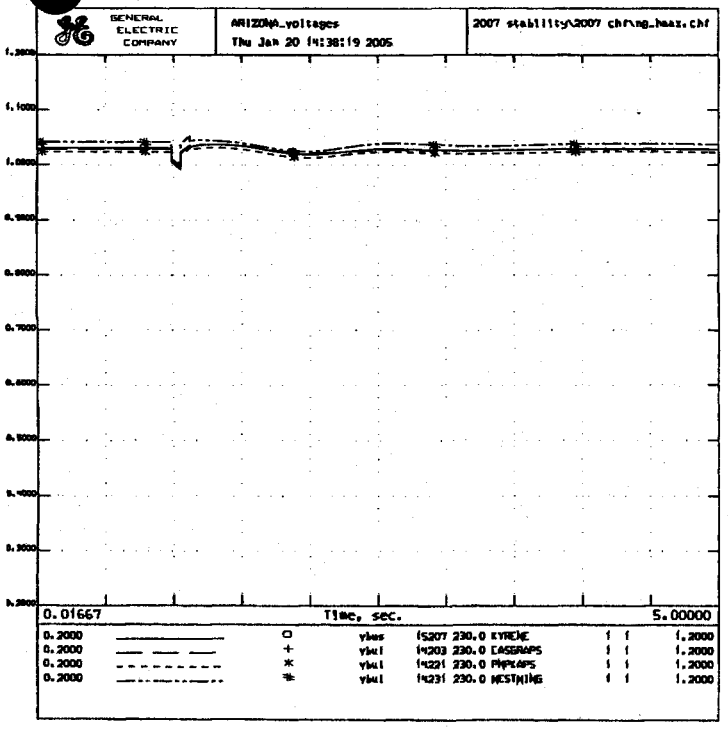
N.GILA FLT N.GILA-HASSY LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
N.GILA STAB,3 PH FLT N.GILA 500KV
FLASH CAPS,N/4 CYC CLR FLT;HASSAYMPA-NG OUT;4/8 CYC REIN CAPS

2007 Case for 10-Year Plan Stability

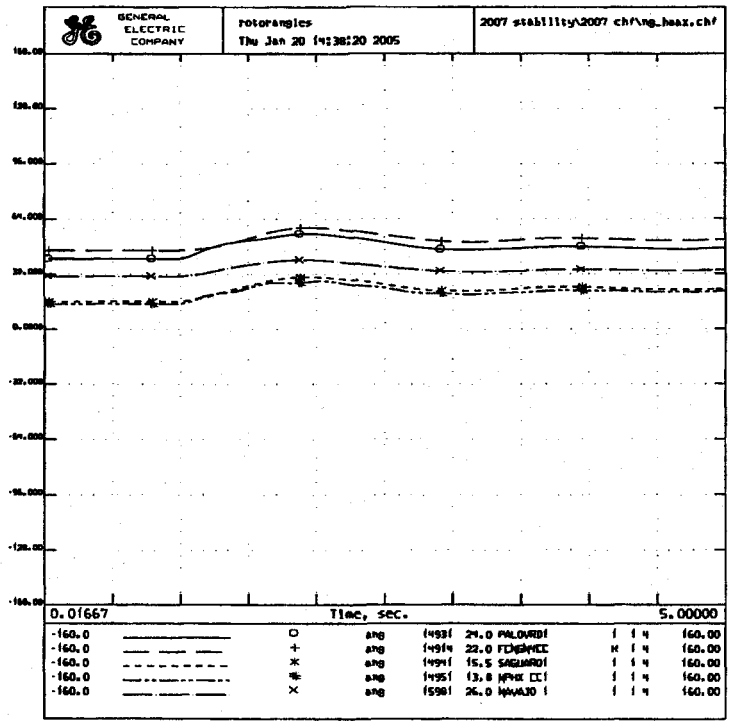


N.GILA FLT N.GILA-HASSY LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
N.GILA STAB,3 PH FLT N.GILA 500KV
FLASH CAPS,N/4 CYC CLR FLT;HASSAYMPA-NG OUT;4/8 CYC REIN CAPS

2007 Case for 10-Year Plan Stability

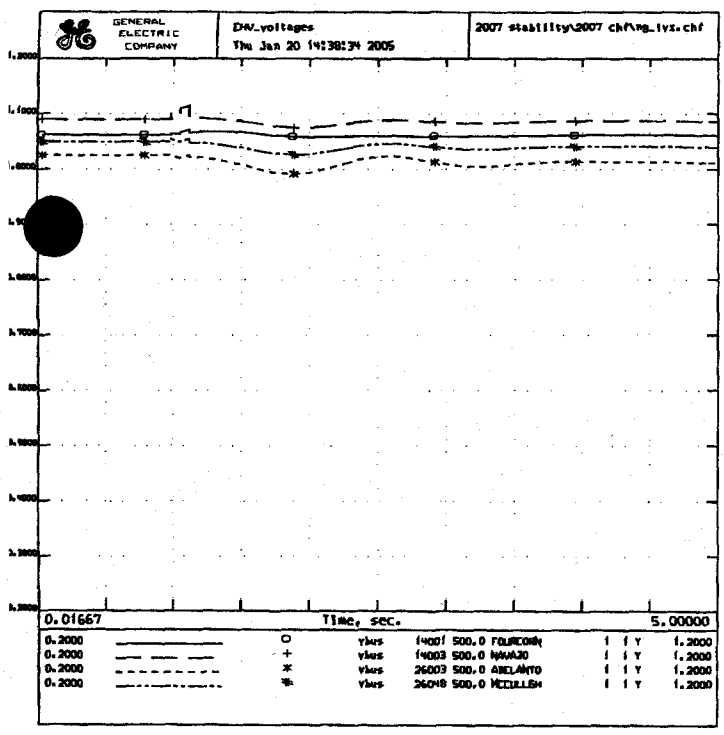


N.GILA FLT N.GILA-HASSY LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
[redacted]A STAB,3 PH FLT N.GILA 500KV
[redacted] CAPS,N/4 CYC CLR FLT;HASSAYMPA-NG OUT;4/8 CYC REIN CAPS
[redacted] Case for 10-Year Plan Stability



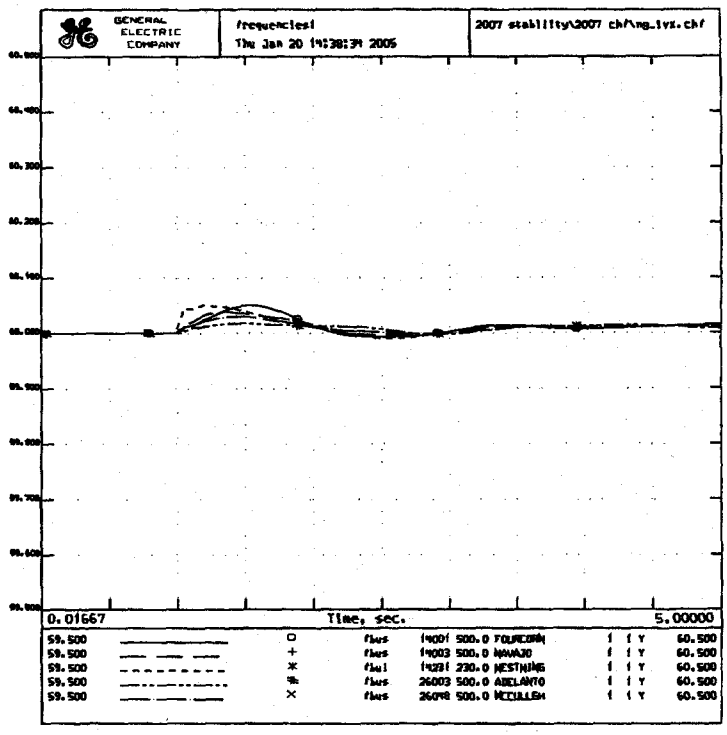
N.GILA FLT N.GILA-HASSY LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
N.GILA STAB,3 PH FLT N.GILA 500KV
FLASH CAPS,N/4 CYC CLR FLT;HASSAYMPA-NG OUT;4/8 CYC REIN CAPS

2007 Case for 10-Year Plan Stability



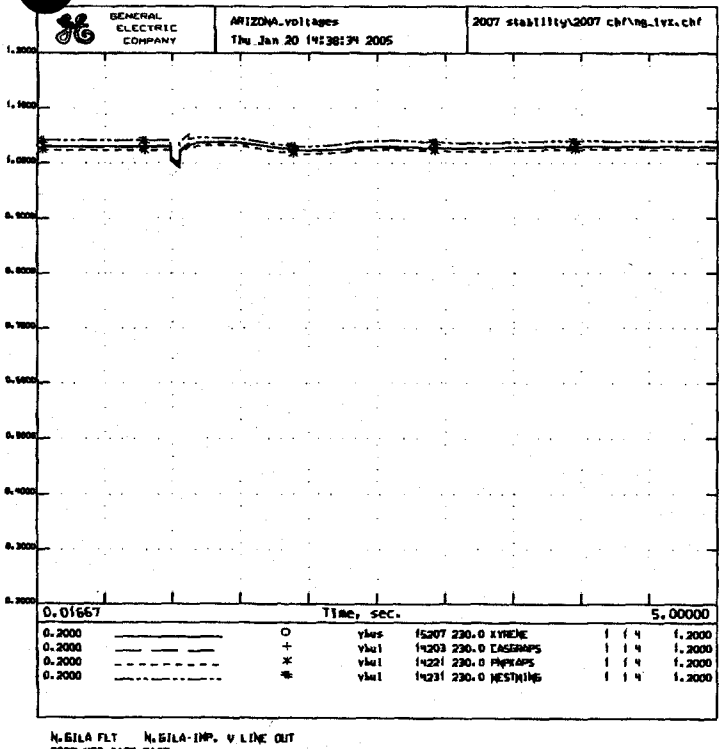
N.GILA FLT N.GILA-IMP. V LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
N.GILA STAB,3 PH FLT N.GILA 500KV
FLASH CAPS,N/4 CYC CLR FLT;IMPV-NG OUT;4/8 CYC REIN CAPS

2007 Case for 10-Year Plan Stability

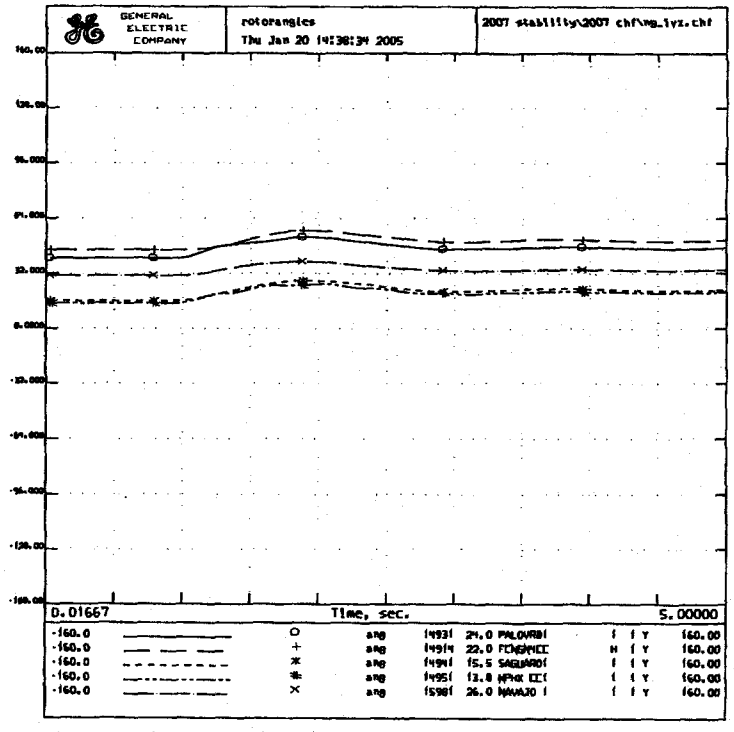


N.GILA FLT N.GILA-IMP. V LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
N.GILA STAB,3 PH FLT N.GILA 500KV
FLASH CAPS,N/4 CYC CLR FLT;IMPV-NG OUT;4/8 CYC REIN CAPS

2007 Case for 10-Year Plan Stability

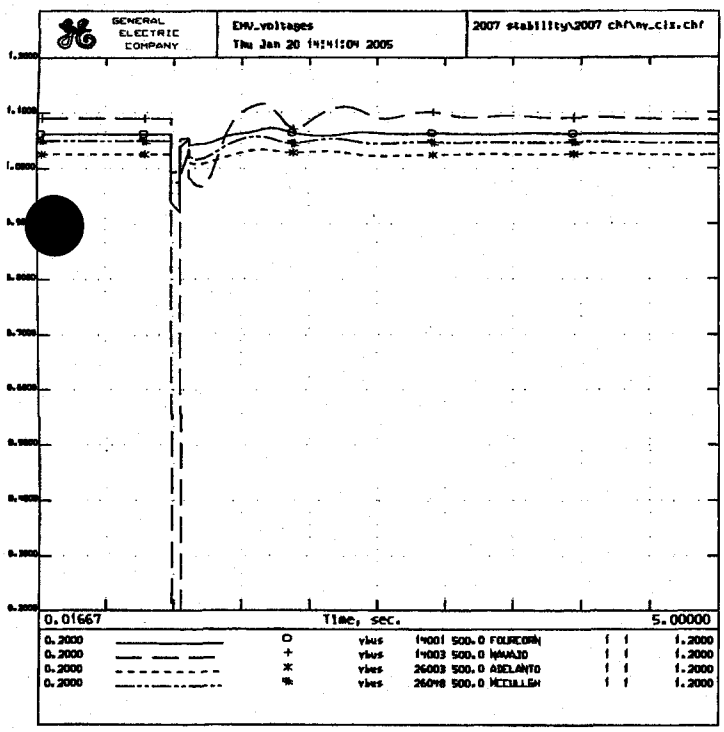


N.GILA FLT N.GILA-IMP. V LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible]LA STAB,3 PH FLT N.GILA 500KV
[illegible] CAPS,N/4 CYC CLR FLT;IMPV-NG OUT;4/8 CYC REIN CAPS
[illegible] Case for 10-Year Plan Stability



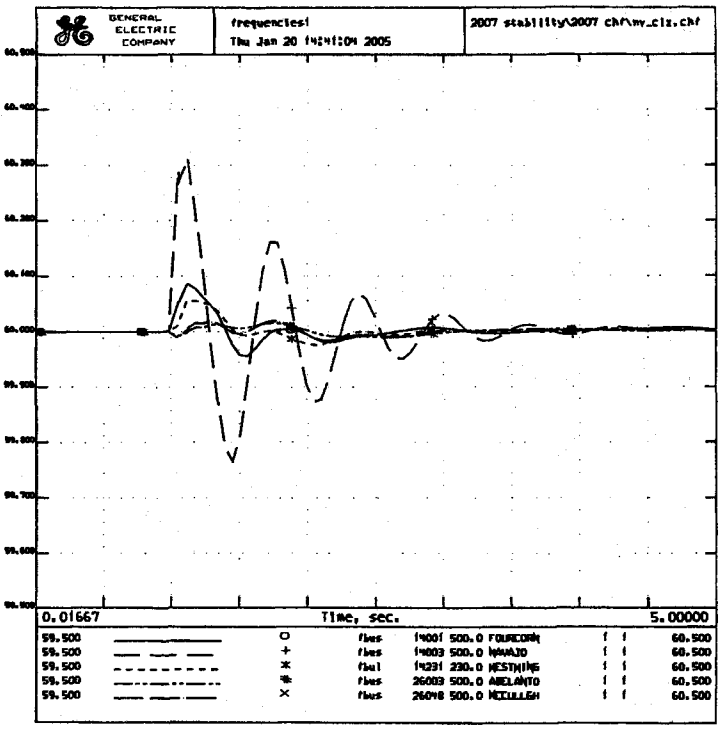
N.GILA FLT N.GILA-IMP. V LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
N.GILA STAB,3 PH FLT N.GILA 500KV
FLASH CAPS,N/4 CYC CLR FLT;IMPV-NG OUT;4/8 CYC REIN CAPS

2007 Case for 10-Year Plan Stability



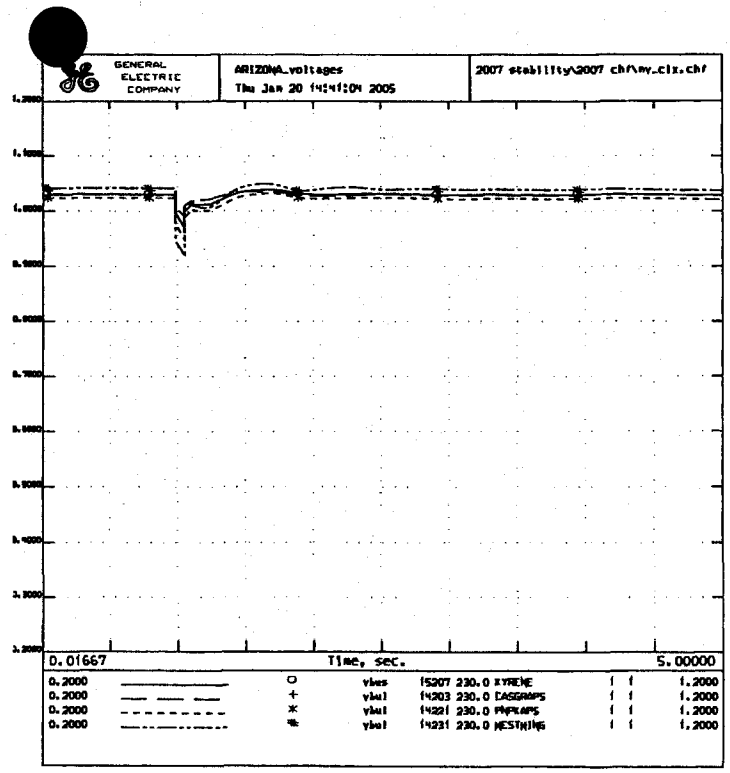
NAV, FLT, Nav-Crystal line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-CRYS STAB; 1/05; T+0 3P FLT NAV500; 6% FLT BMPING;FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/NAV-CRYS;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



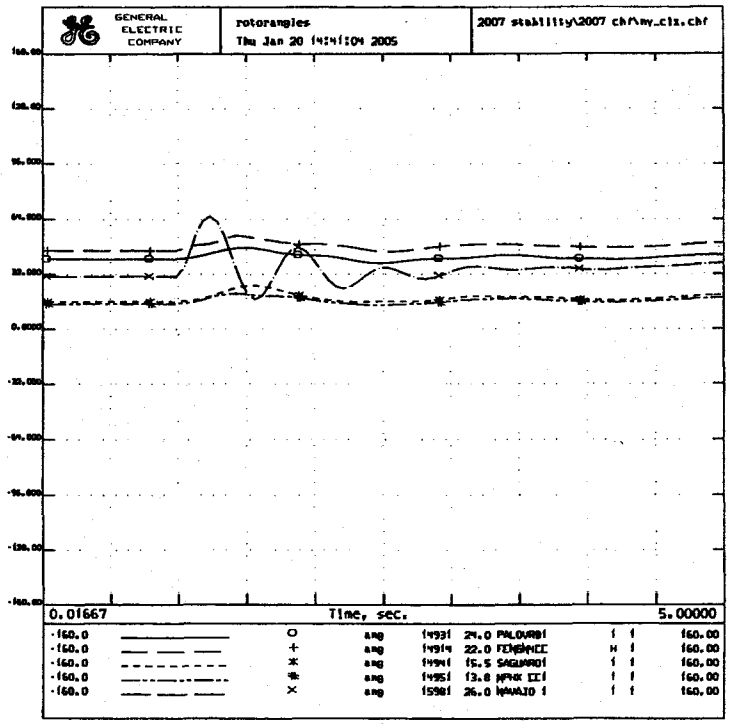
NAV, FLT, Nav-Crystal line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-CRYS STAB; 1/05; T+0 3P FLT NAV500; 6% FLT BMPING;FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/NAV-CRYS;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



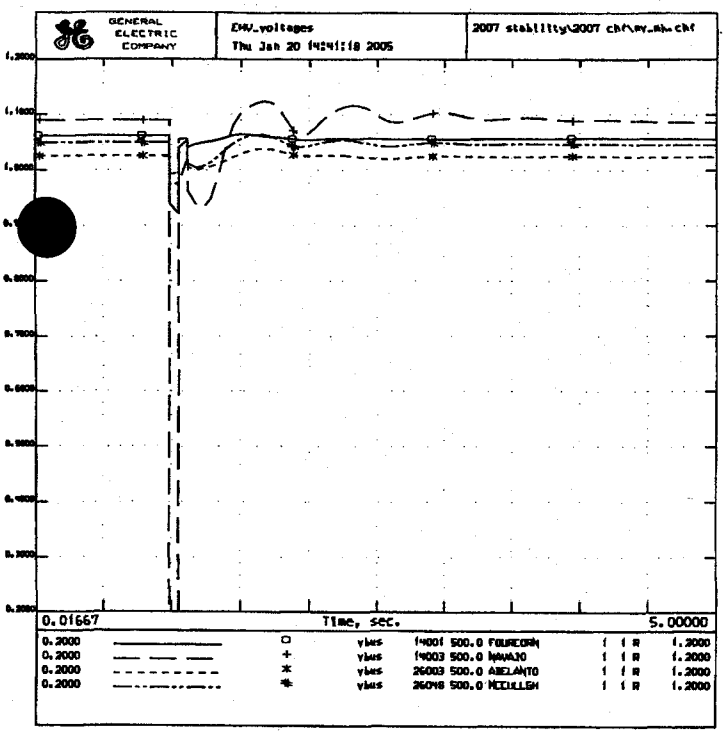
NAV, FLT, Nav-Crystal line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
CRYS STAB; 1/05; T+0 3P FLT NAV500; 6% FLT BMPING;FLSH CAPS
CC/MKP,MKP-ELD;4C CLR FLT N/NAV-CRYS;8C RE1N;2007.dyd;MSCC.bat

Case for 10-Year Plan Stability



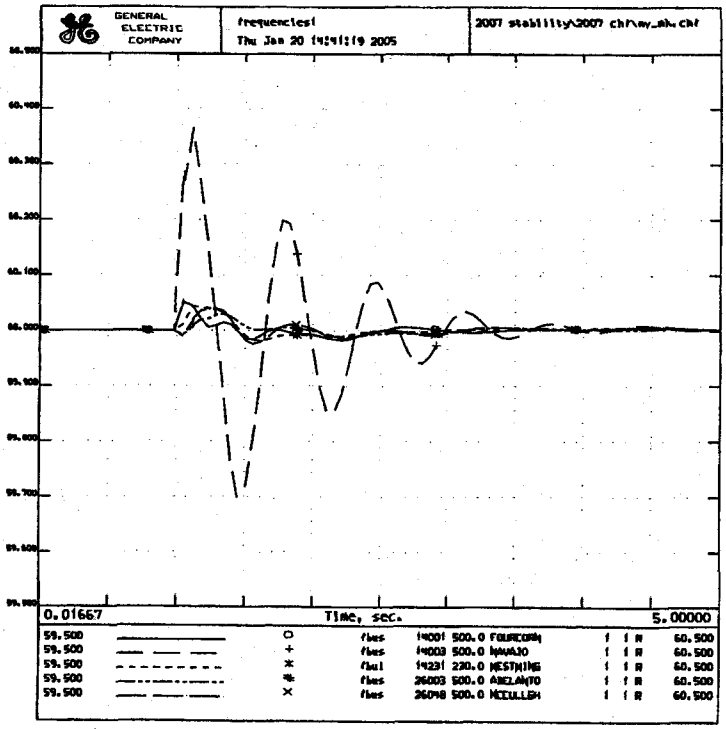
NAV, FLT, Nav-Crystal line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-CRYS STAB; 1/05; T+0 3P FLT NAV500; 6% FLT BMPING;FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/NAV-CRYS;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



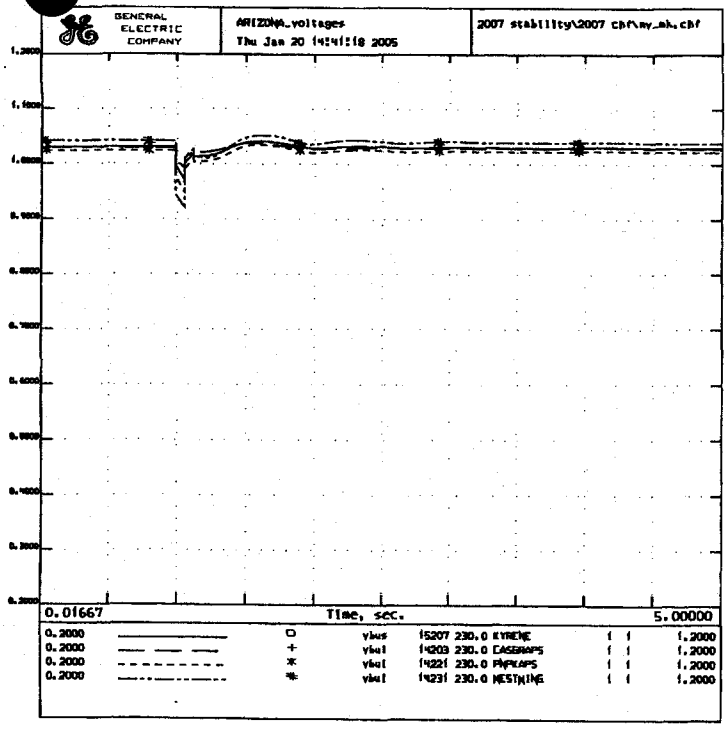
NAV, FLT, NavJo-Mnk, line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-MKP STAB; 1/0S; T=0 3P FLT NAV500; 6% FLT DMPING;FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/NAV-MKP;8C REIN;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



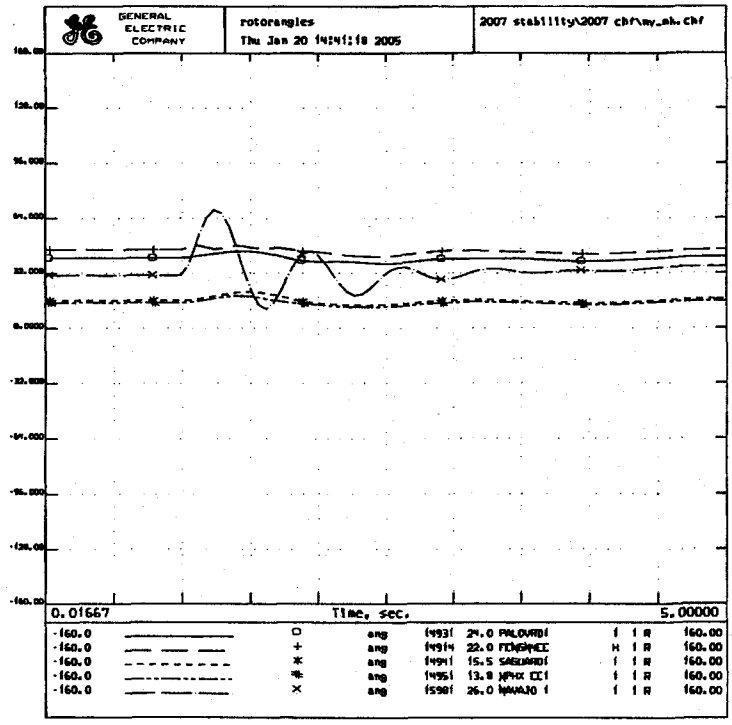
NAV, FLT, NavJo-Mnk, line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-MKP STAB; 1/0S; T=0 3P FLT NAV500; 6% FLT DMPING;FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/NAV-MKP;8C REIN;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



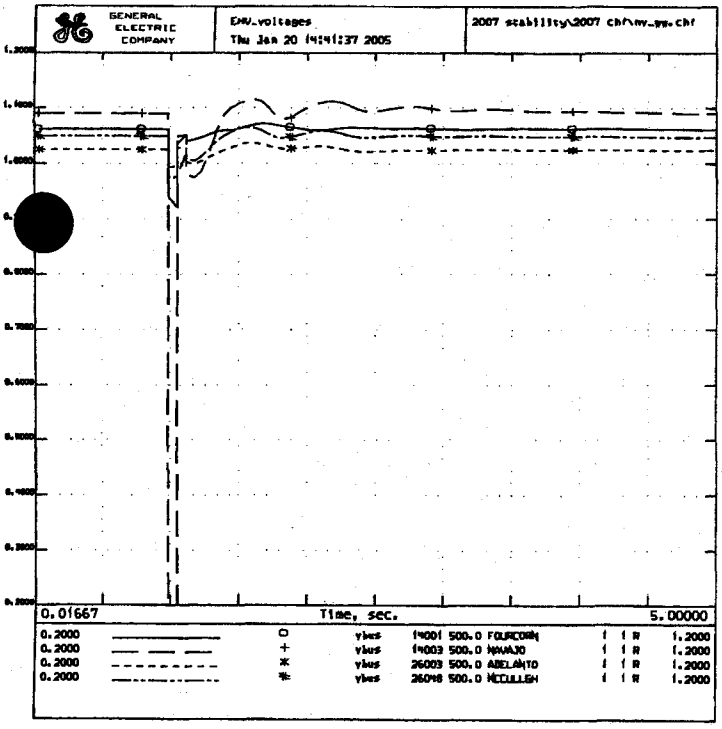
NAV, FLT, NavJo-Mnk, line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible]MKP STAB; 1/0S; T=0 3P FLT NAV500; 6% FLT DMPING;FLSH CAPS
[illegible]CC/MKP,MKP-ELD;4C CLR FLT N/NAV-MKP;8C REIN;2007.dyd;MSCC.bat

[illegible] Case for 10-Year Plan Stability



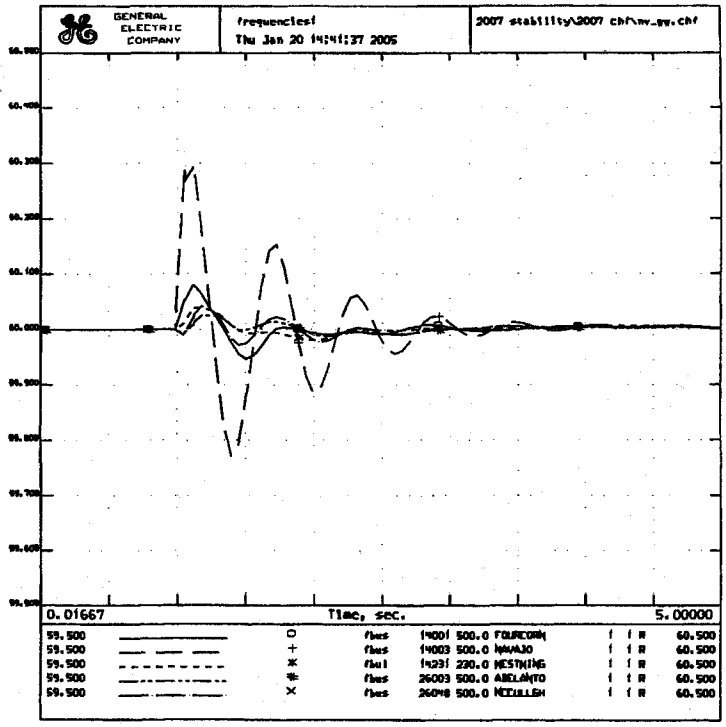
NAV, FLT, NavJo-Mnk, line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-MKP STAB; 1/0S; T=0 3P FLT NAV500; 6% FLT DMPING;FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C CLR FLT N/NAV-MKP;8C REIN;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



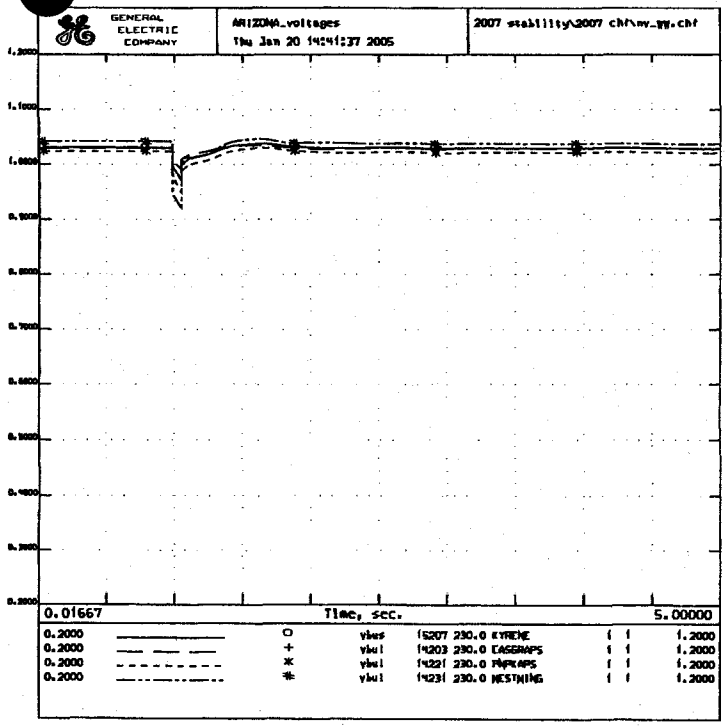
NAV FLT NAV-MH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-MHG STAB; 1/05; T+0 3P FLT NAV500; 6% FLT DMPING; FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C ELR FLT N/NAV-MHG;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



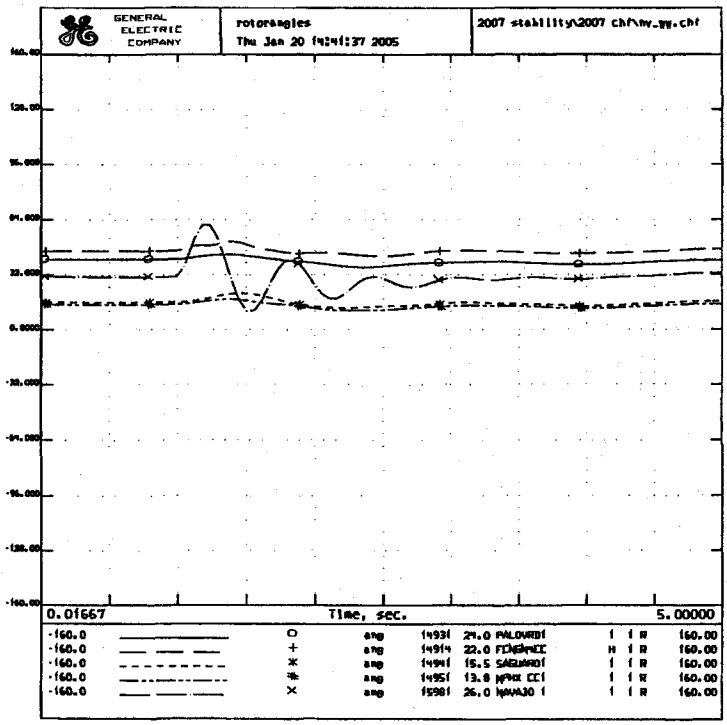
NAV FLT NAV-MH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-MHG STAB; 1/05; T+0 3P FLT NAV500; 6% FLT DMPING; FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C ELR FLT N/NAV-MHG;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



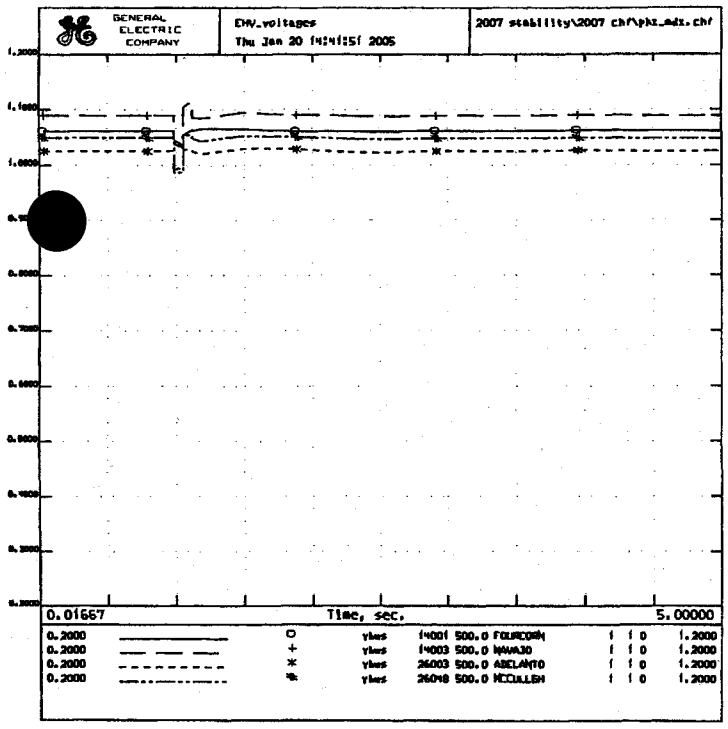
NAV FLT NAV-MH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-MHG STAB; 1/05; T+0 3P FLT NAV500; 6% FLT DMPING; FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C ELR FLT N/NAV-MHG;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



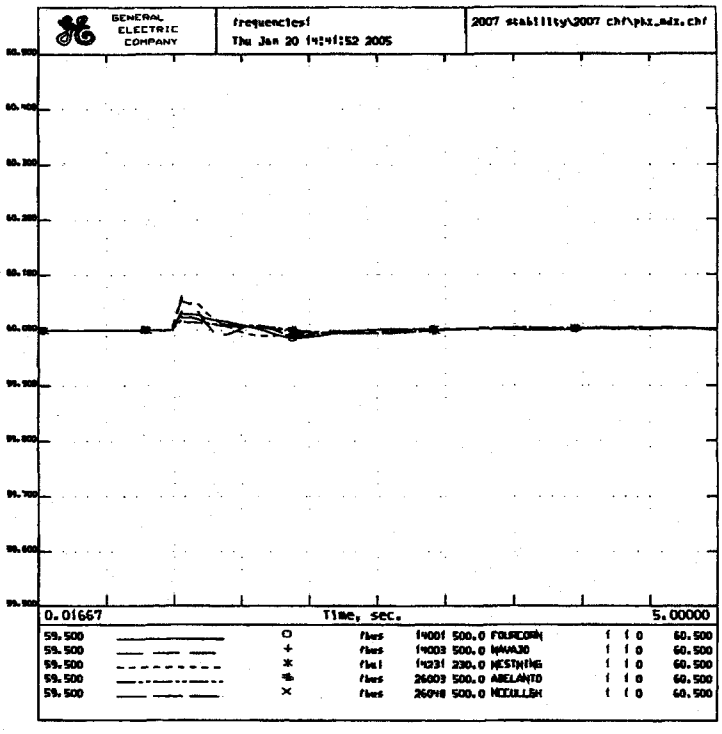
NAV FLT NAV-MH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV-MHG STAB; 1/05; T+0 3P FLT NAV500; 6% FLT DMPING; FLSH CAPS
NAV-MCC/MKP,MKP-ELD;4C ELR FLT N/NAV-MHG;8C RE1N;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



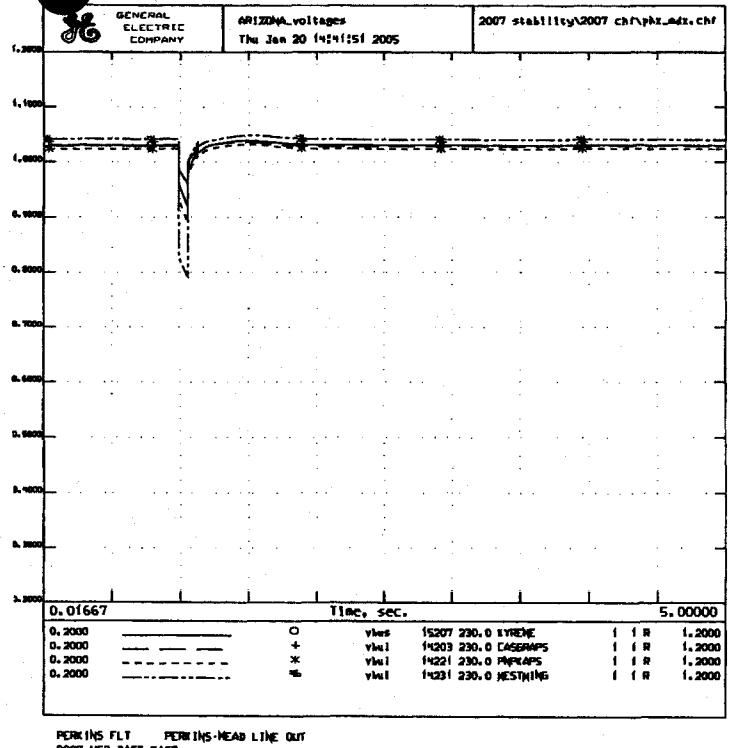
PERKINS FLT PERKINS-MEAD LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PERK-MEAD STAB: 01/05; T+0 3P FLT PERK500;FLSH CAPS MKP-YAV/YAV-MNS,
NAV-MKP/MNS;4C CLR FLT N/PERK-MEAD;BC RE1N;2007.dyd;NSCC.bat

2007 Case for 10-Year Plan Stability

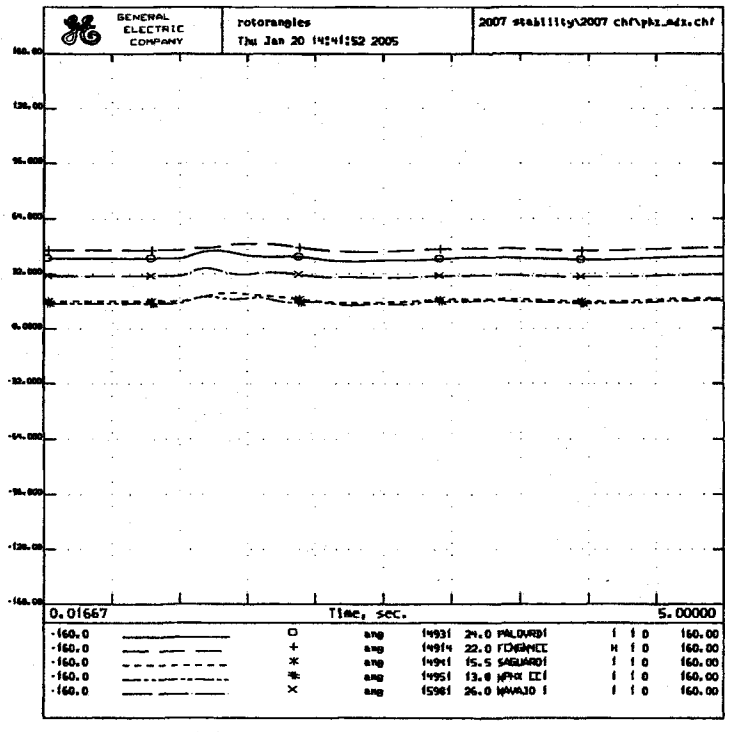


PERKINS FLT PERKINS-MEAD LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PERK-MEAD STAB: 01/05; T+0 3P FLT PERK500;FLSH CAPS MKP-YAV/YAV-MNS,
NAV-MKP/MNS;4C CLR FLT N/PERK-MEAD;BC RE1N;2007.dyd;NSCC.bat

2007 Case for 10-Year Plan Stability

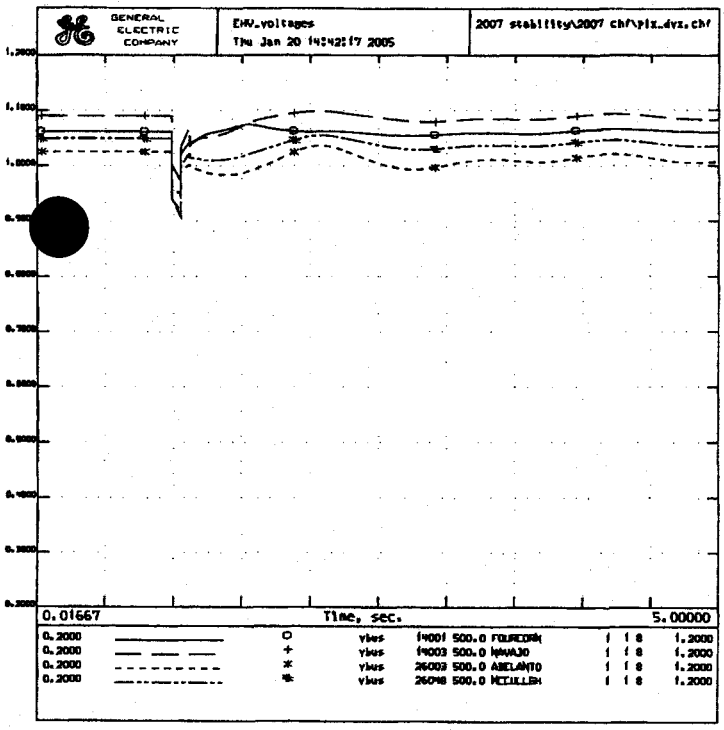


PERKINS FLT PERKINS-MEAD LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
MEAD STAB: 01/05; T+0 3P FLT PERK500;FLSH CAPS MKP-YAV/YAV-MNS,
P/MNS;4C CLR FLT N/PERK-MEAD;BC RE1N;2007.dyd;NSCC.bat
Case for 10-Year Plan Stability



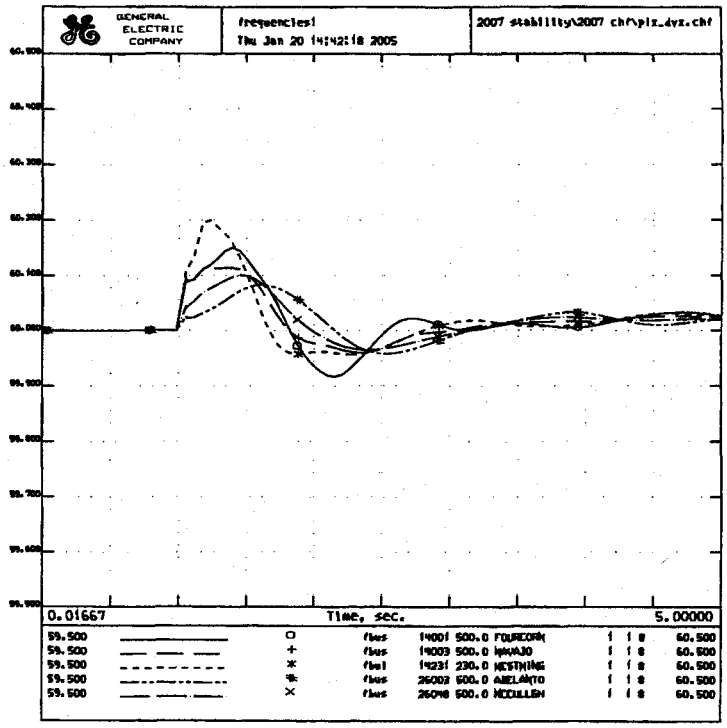
PERKINS FLT PERKINS-MEAD LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PERK-MEAD STAB: 01/05; T+0 3P FLT PERK500;FLSH CAPS MKP-YAV/YAV-MNS,
NAV-MKP/MNS;4C CLR FLT N/PERK-MEAD;BC RE1N;2007.dyd;NSCC.bat

2007 Case for 10-Year Plan Stability



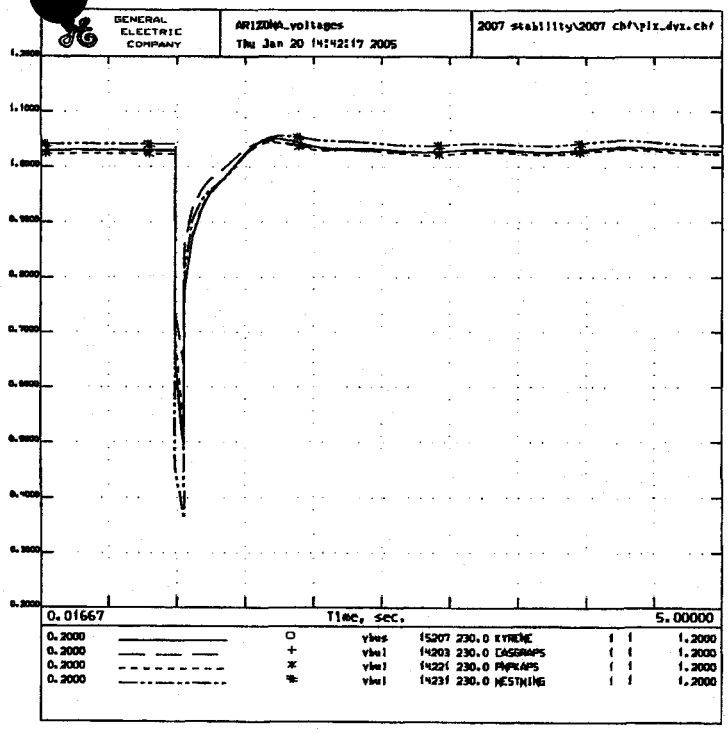
PV FLT, w/PV - Devers line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-DEV STAB; 1/05; T+0 3P FLT PV500; 10% FLT DMPING; FLSH CAPS
WAV-MKP/MKP-YAV, PV-DV/MG; MC CLR FLT W/PV-DEVBC RE1%; 2007.dyd; MSCC.bat

2007 Case for 10-Year Plan Stability



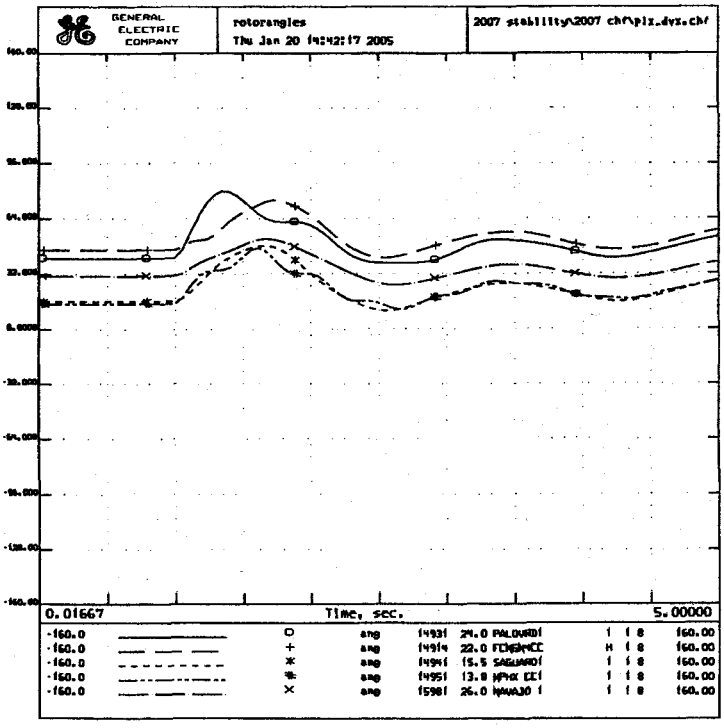
PV FLT, w/PV - Devers line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-DEV STAB; 1/05; T+0 3P FLT PV500; 10% FLT DMPING; FLSH CAPS
WAV-MKP/MKP-YAV, PV-DV/MG; MC CLR FLT W/PV-DEVBC RE1%; 2007.dyd; MSCC.bat

2007 Case for 10-Year Plan Stability



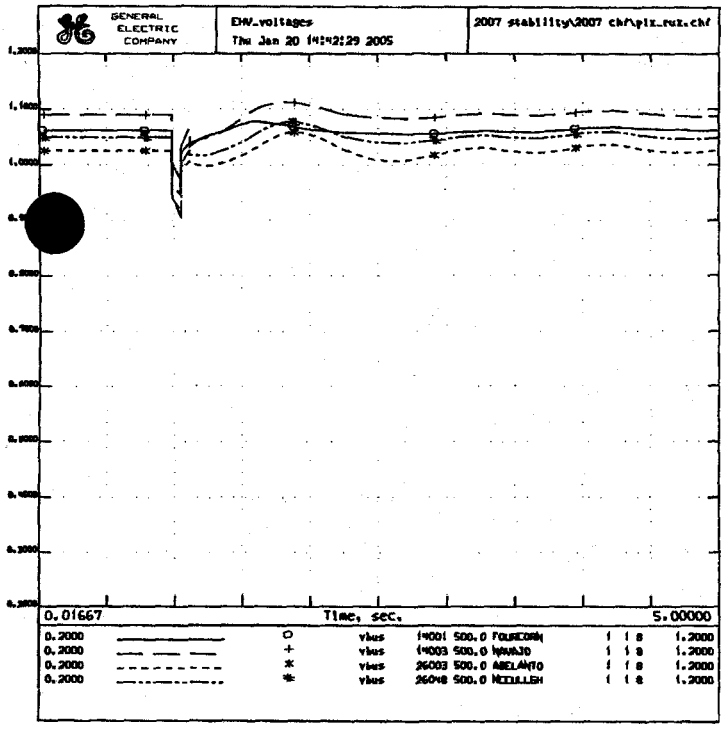
PV FLT, w/PV - Devers line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-DEV STAB; 1/05; T+0 3P FLT PV500; 10% FLT DMPING; FLSH CAPS
WAV-MKP/MKP-YAV, PV-DV/MG; MC CLR FLT W/PV-DEVBC RE1%; 2007.dyd; MSCC.bat

2007 Case for 10-Year Plan Stability



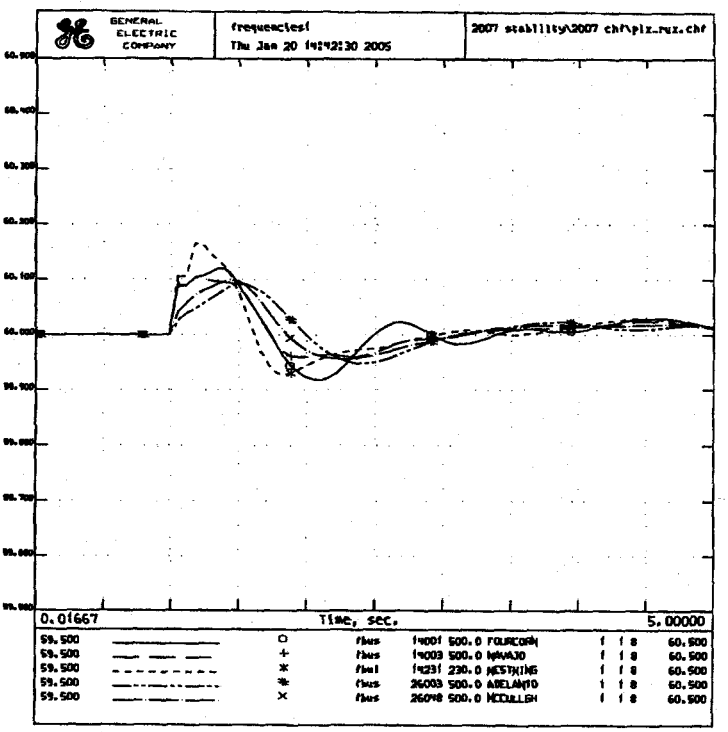
PV FLT, w/PV - Devers line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-DEV STAB; 1/05; T+0 3P FLT PV500; 10% FLT DMPING; FLSH CAPS
WAV-MKP/MKP-YAV, PV-DV/MG; MC CLR FLT W/PV-DEVBC RE1%; 2007.dyd; MSCC.bat

2007 Case for 10-Year Plan Stability



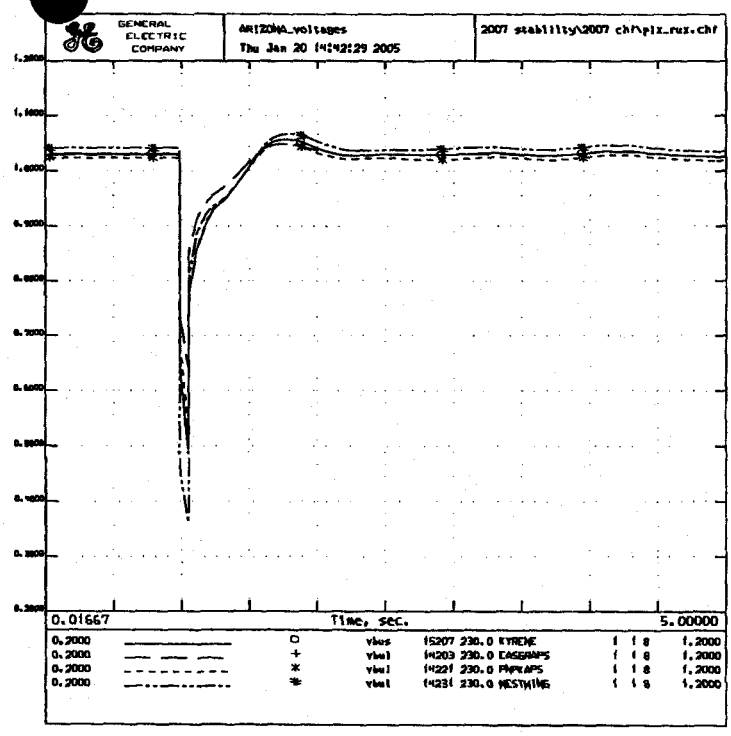
PALO VERDE FLT PV-RUBD LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-RUBD STAB ±[; 01/05; T=0 3P FLT PV500;10% FLT DMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/WG;4C CLR FLT W/PV-RUBBC RE1W;2007.dyd;WSCC.bpt

2007 Case for 10-Year Plan Stability



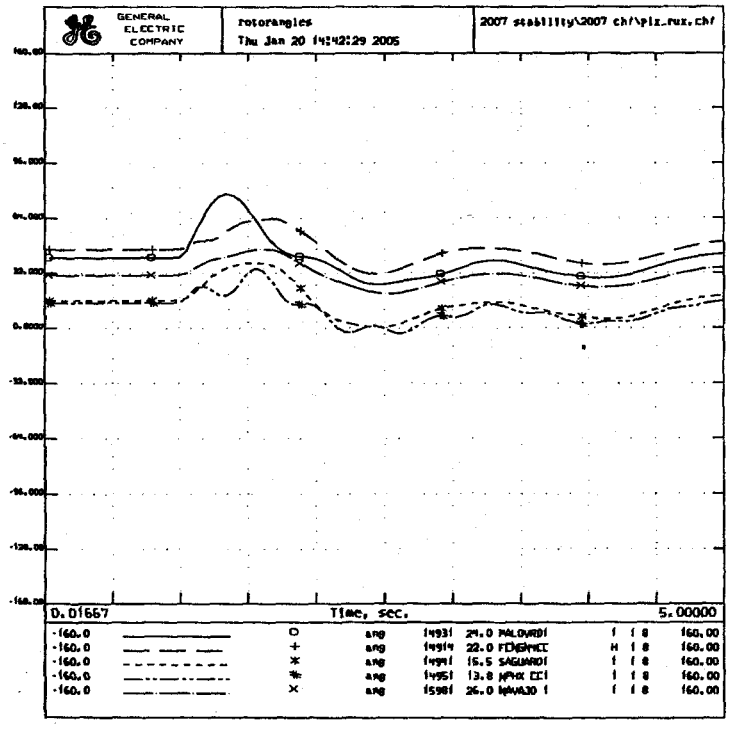
PALO VERDE FLT PV-RUBD LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-RUBD STAB ±[; 01/05; T=0 3P FLT PV500;10% FLT DMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/WG;4C CLR FLT W/PV-RUBBC RE1W;2007.dyd;WSCC.bpt

2007 Case for 10-Year Plan Stability



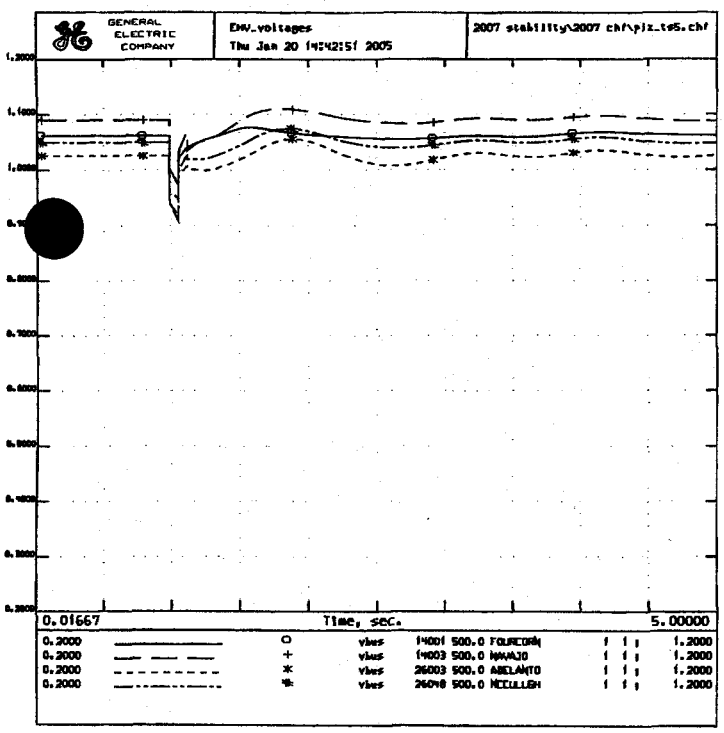
PALO VERDE FLT PV-RUBD LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
RUBD STAB ±[; 01/05; T=0 3P FLT PV500;10% FLT DMPING;FLSH CAPS
KP/MKP-YAV,PV-DV/WG;4C CLR FLT W/PV-RUBBC RE1W;2007.dyd;WSCC.bpt

Case for 10-Year Plan Stability



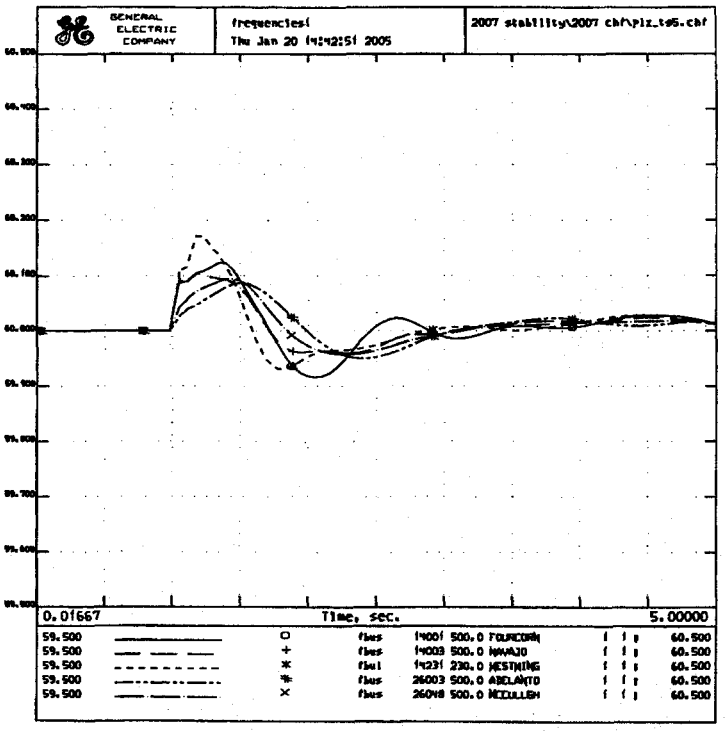
PALO VERDE FLT PV-RUBD LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-RUBD STAB ±[; 01/05; T=0 3P FLT PV500;10% FLT DMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/WG;4C CLR FLT W/PV-RUBBC RE1W;2007.dyd;WSCC.bpt

2007 Case for 10-Year Plan Stability



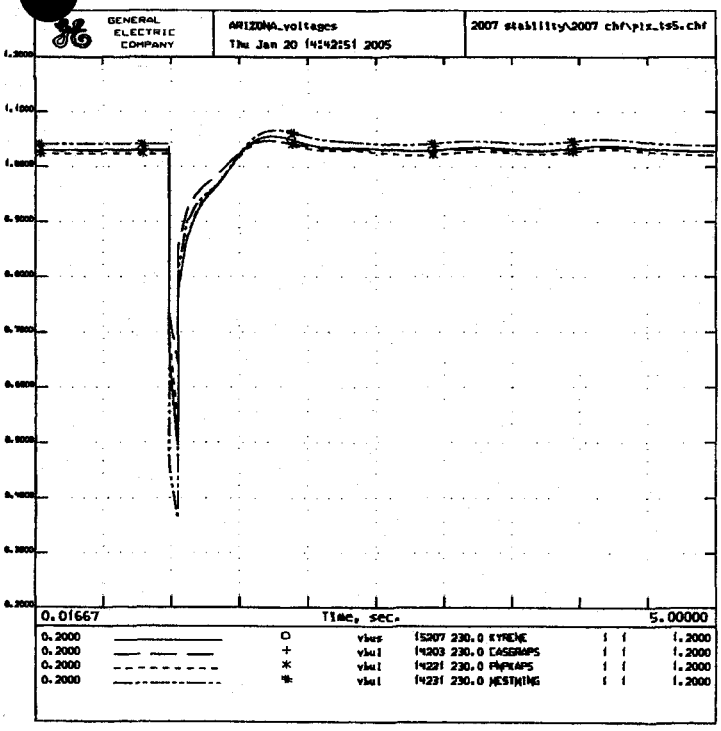
PALO VERDE FLT PV-TSS LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-TSS STAB .(; 01/05; T+0 3P FLT PV500;(0% FLT DNPING&FLSH CAPS
NAV-MEP/MEP-YAV,PV-DV/NG&*C CLR FLT N/PV-TSS&BC REIN&2007.dyd&SCC.bpt

2007 Case for 10-Year Plan Stability



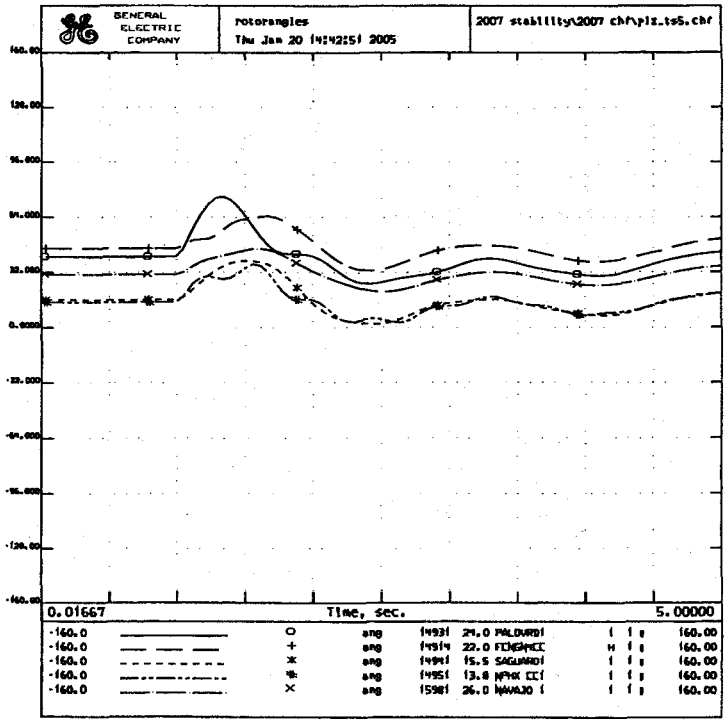
PALO VERDE FLT PV-TSS LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-TSS STAB .(; 01/05; T+0 3P FLT PV500;(0% FLT DNPING&FLSH CAPS
NAV-MEP/MEP-YAV,PV-DV/NG&*C CLR FLT N/PV-TSS&BC REIN&2007.dyd&SCC.bpt

2007 Case for 10-Year Plan Stability



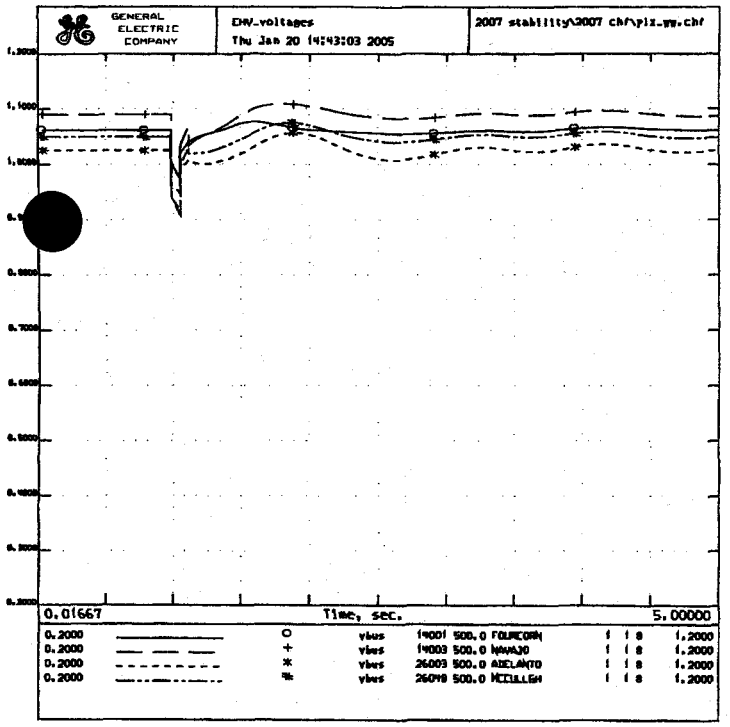
PALO VERDE FLT PV-TSS LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
TSS STAB .(; 01/05; T+0 3P FLT PV500;(0% FLT DNPING&FLSH CAPS
EP/MEP-YAV,PV-DV/NG&*C CLR FLT N/PV-TSS&BC REIN&2007.dyd&SCC.bpt

Case for 10-Year Plan Stability



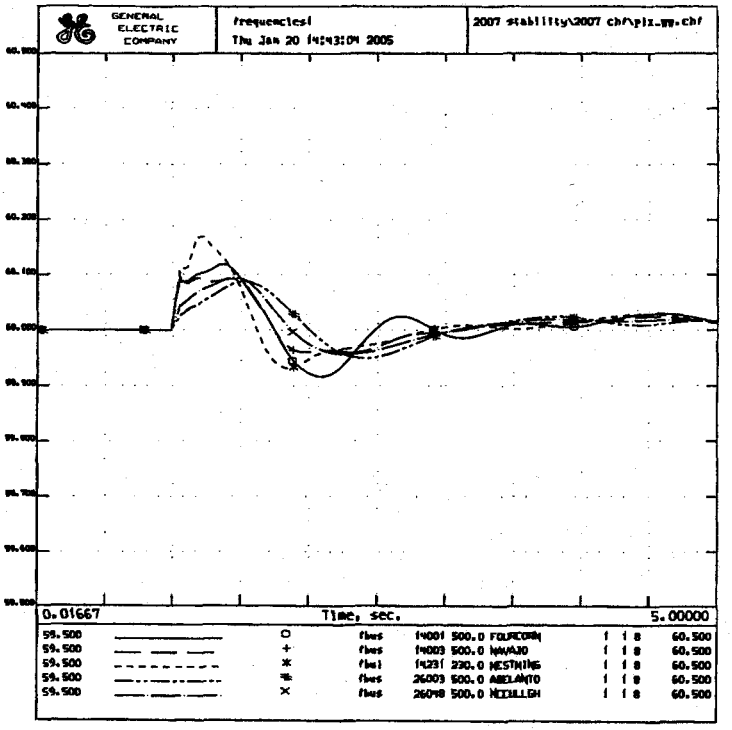
PALO VERDE FLT PV-TSS LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-TSS STAB .(; 01/05; T+0 3P FLT PV500;(0% FLT DNPING&FLSH CAPS
NAV-MEP/MEP-YAV,PV-DV/NG&*C CLR FLT N/PV-TSS&BC REIN&2007.dyd&SCC.bpt

2007 Case for 10-Year Plan Stability



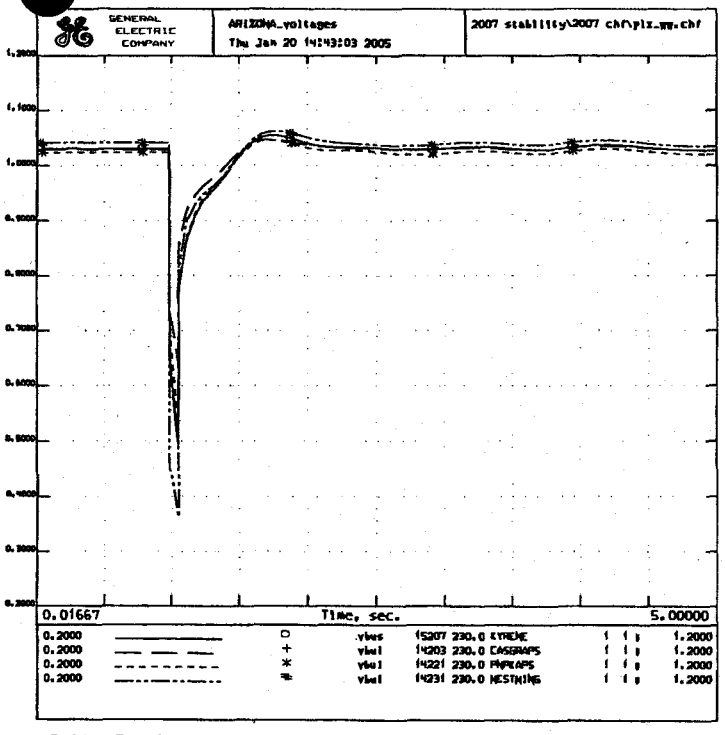
PV FLT g/PV-MK line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-MKG STAB1 1/05; T=0 3P FLT PVS00; 10% FLT BMPING; FLSH CAPS
NAV-MEP/MEP-YAV,PV-BV/MG14C CLR FLT M/PV-MK18C REIN;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



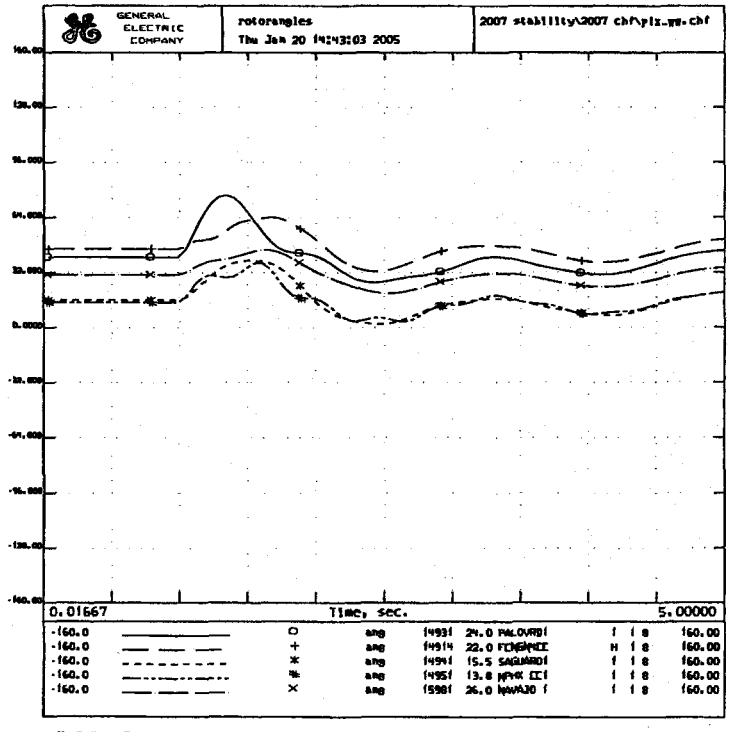
PV FLT g/PV-MK line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-MKG STAB1 1/05; T=0 3P FLT PVS00; 10% FLT BMPING; FLSH CAPS
NAV-MEP/MEP-YAV,PV-BV/MG14C CLR FLT M/PV-MK18C REIN;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



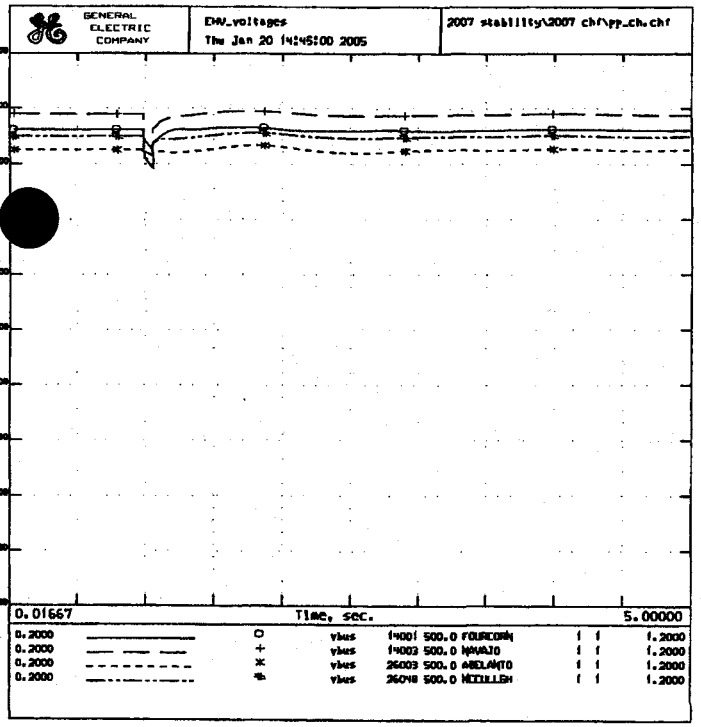
PV FLT g/PV-MK line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible]G STAB1 1/05; T=0 3P FLT PVS00; 10% FLT BMPING; FLSH CAPS
[illegible]EP/MEP-YAV,PV-BV/MG14C CLR FLT M/PV-MK18C REIN;2007.dyd;MSCC.bat

[illegible] Case for 10-Year Plan Stability



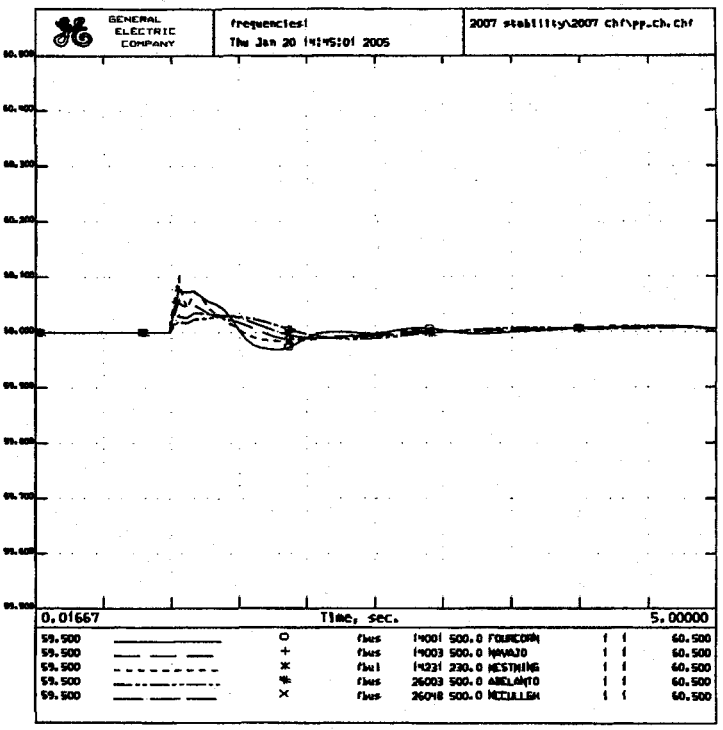
PV FLT g/PV-MK line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-MKG STAB1 1/05; T=0 3P FLT PVS00; 10% FLT BMPING; FLSH CAPS
NAV-MEP/MEP-YAV,PV-BV/MG14C CLR FLT M/PV-MK18C REIN;2007.dyd;MSCC.bat

2007 Case for 10-Year Plan Stability



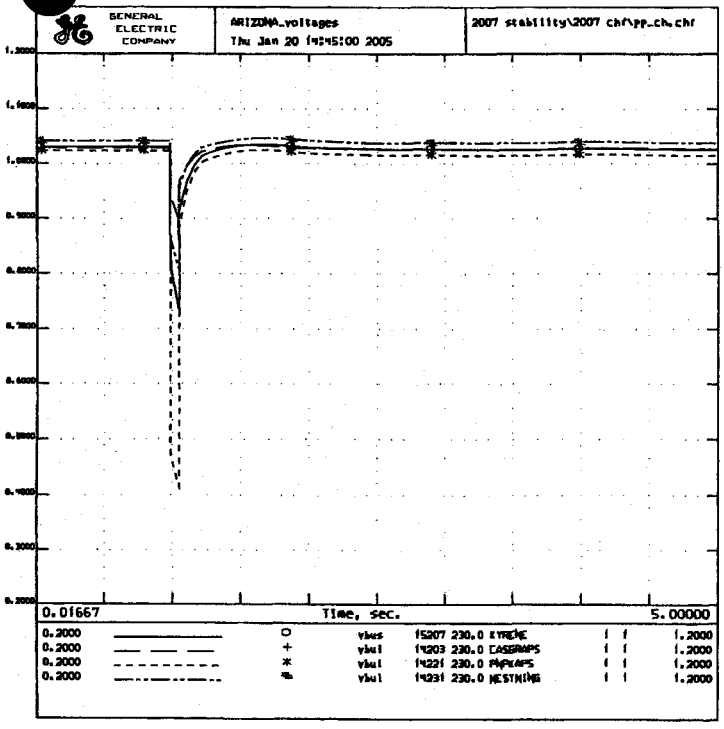
PWRK 345KV FLT PP-CH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PP-CH STAB s(; 01/05; T+0 3P FLT PP345;
*C CLR FLT N/PP-CH;2007.dyd;NSCC.bpt

2007 Case for 10-Year Plan Stability



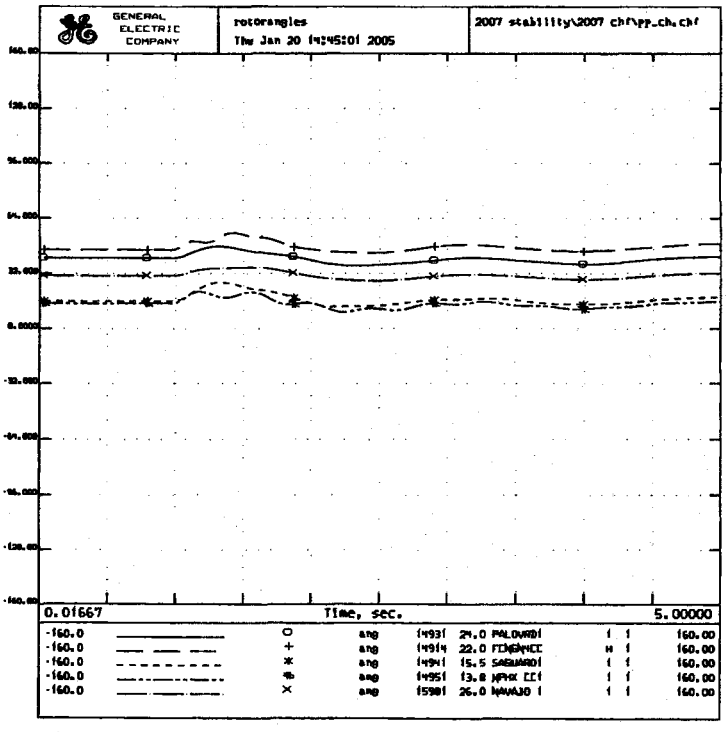
PWRK 345KV FLT PP-CH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PP-CH STAB s(; 01/05; T+0 3P FLT PP345;
*C CLR FLT N/PP-CH;2007.dyd;NSCC.bpt

2007 Case for 10-Year Plan Stability



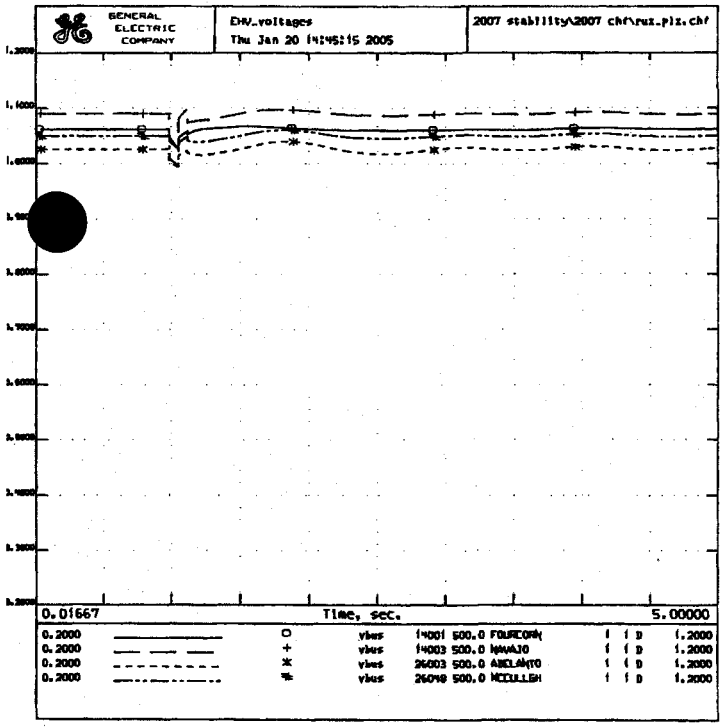
PWRK 345KV FLT PP-CH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
[redacted]H STAB s(; 01/05; T+0 3P FLT PP345;
[redacted]R FLT N/PP-CH;2007.dyd;NSCC.bpt

[redacted] Case for 10-Year Plan Stability



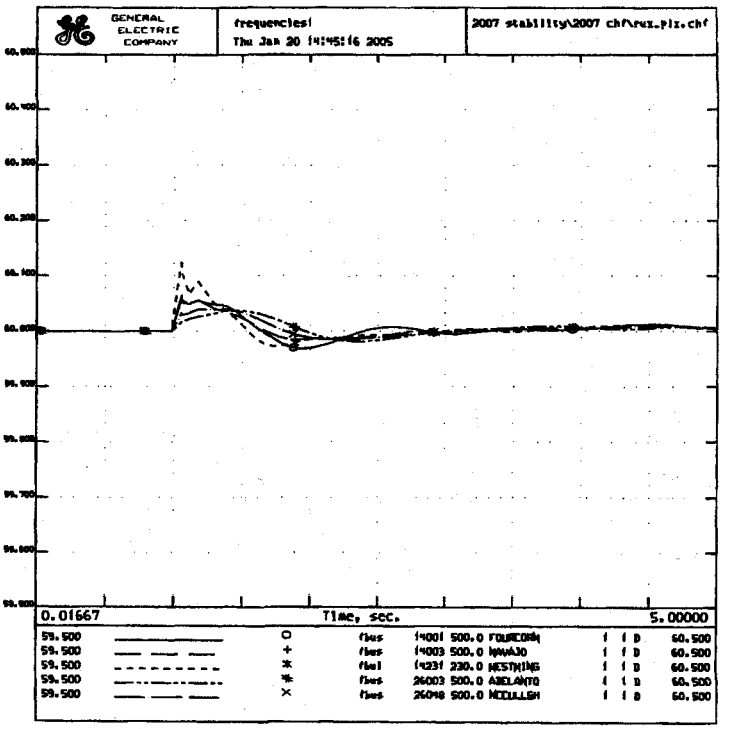
PWRK 345KV FLT PP-CH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PP-CH STAB s(; 01/05; T+0 3P FLT PP345;
*C CLR FLT N/PP-CH;2007.dyd;NSCC.bpt

2007 Case for 10-Year Plan Stability



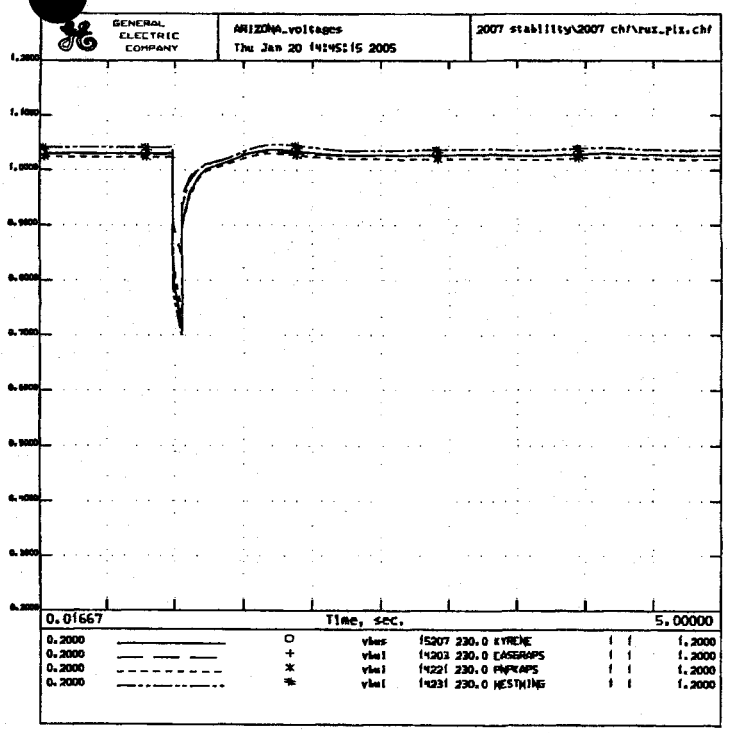
RUDD FLT RUDD-PV LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-RUDD STAB +(; 01/05; T=0 3P FLT RUDD500;10% FLT IMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/NG;4C CLR FLT W/PV-RUDD;8C REIN;2007.dyd;WSCC.bpt

2007 Case for 10-Year Plan Stability



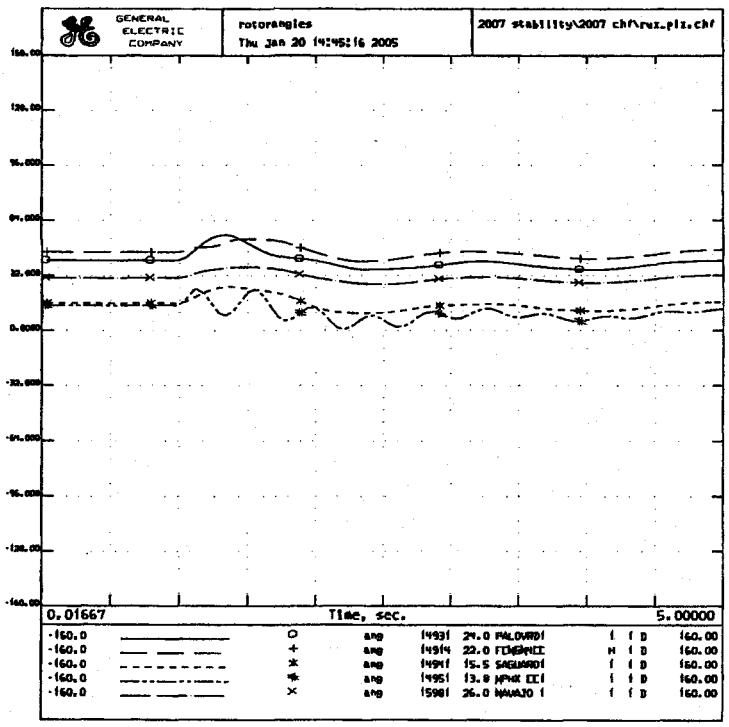
RUDD FLT RUDD-PV LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-RUDD STAB +(; 01/05; T=0 3P FLT RUDD500;10% FLT IMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/NG;4C CLR FLT W/PV-RUDD;8C REIN;2007.dyd;WSCC.bpt

2007 Case for 10-Year Plan Stability



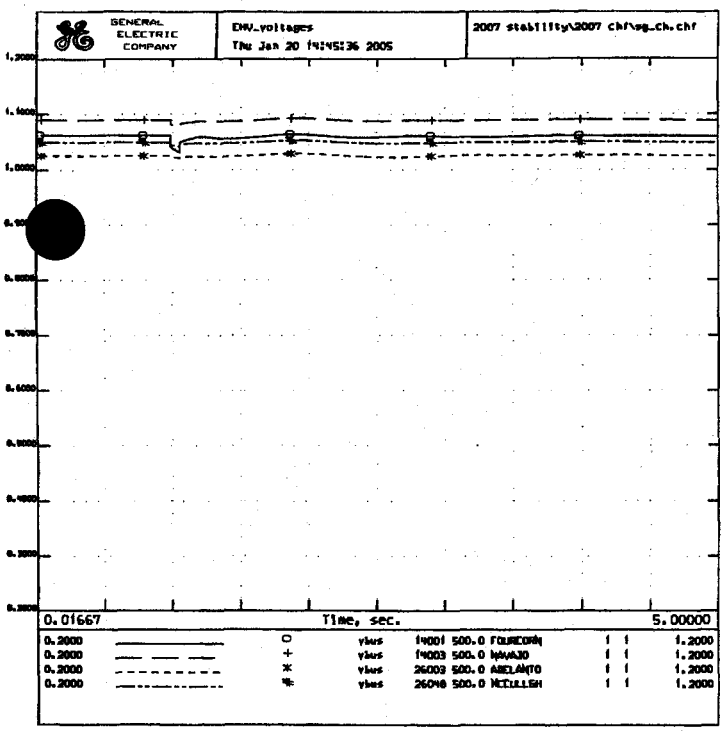
RUDD FLT RUDD-PV LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
RUDD STAB +(; 01/05; T=0 3P FLT RUDD500;10% FLT IMPING;FLSH CAPS
P/MKP-YAV,PV-DV/NG;4C CLR FLT W/PV-RUDD;8C REIN;2007.dyd;WSCC.bpt

Case for 10-Year Plan Stability



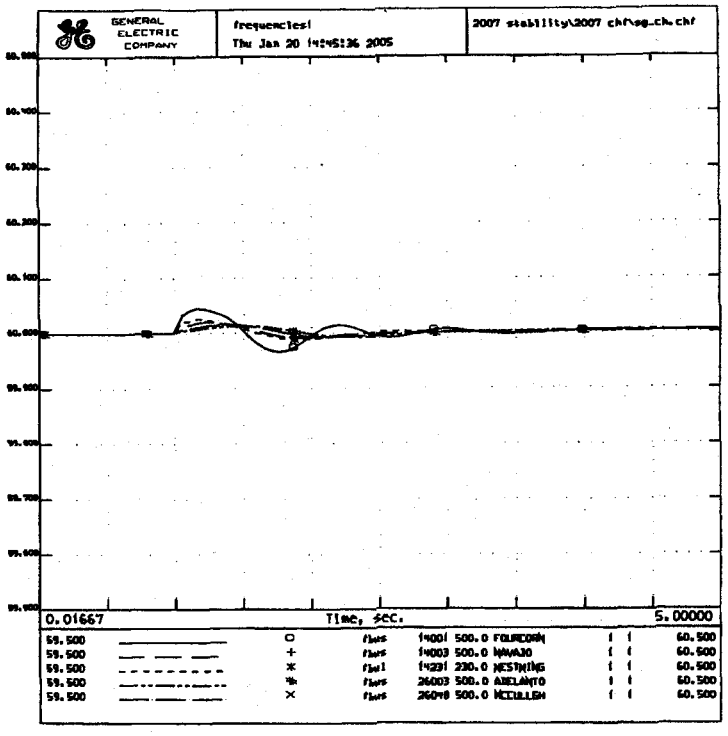
RUDD FLT RUDD-PV LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
PV-RUDD STAB +(; 01/05; T=0 3P FLT RUDD500;10% FLT IMPING;FLSH CAPS
WAV-MKP/MKP-YAV,PV-DV/NG;4C CLR FLT W/PV-RUDD;8C REIN;2007.dyd;WSCC.bpt

2007 Case for 10-Year Plan Stability



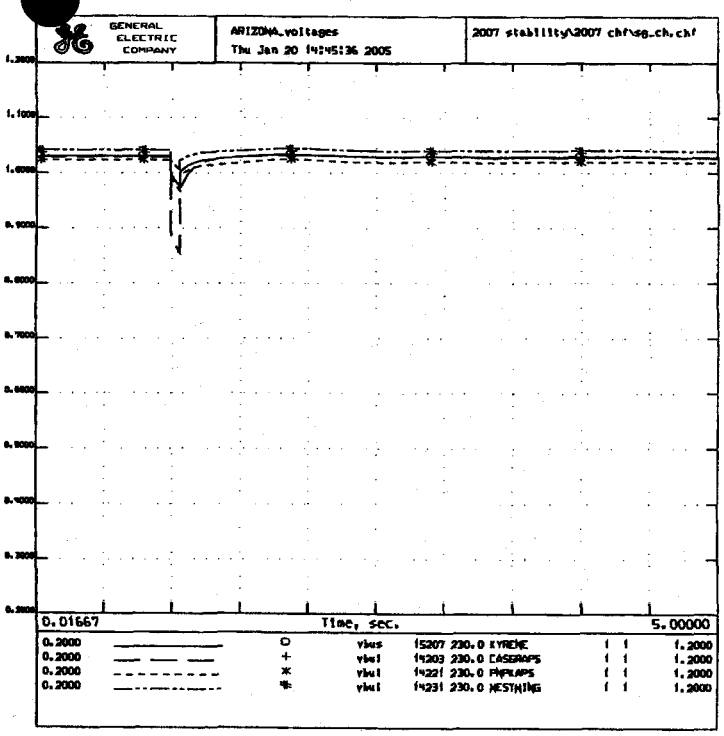
SAGUARO FLT SAG-CH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
SAG-CH STAB ofg 01/05g T=0 3P FLT SAG500g
%C CLR FLT W/SAG-CHg2007.dydgHSCC.bpt

2007 Case for 10-Year Plan Stability

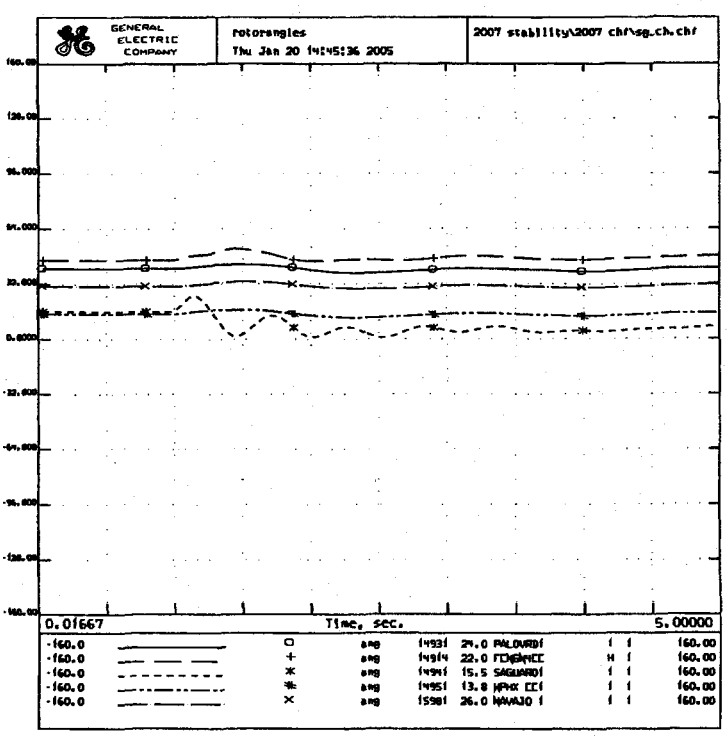


SAGUARO FLT SAG-CH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
SAG-CH STAB ofg 01/05g T=0 3P FLT SAG500g
%C CLR FLT W/SAG-CHg2007.dydgHSCC.bpt

2007 Case for 10-Year Plan Stability

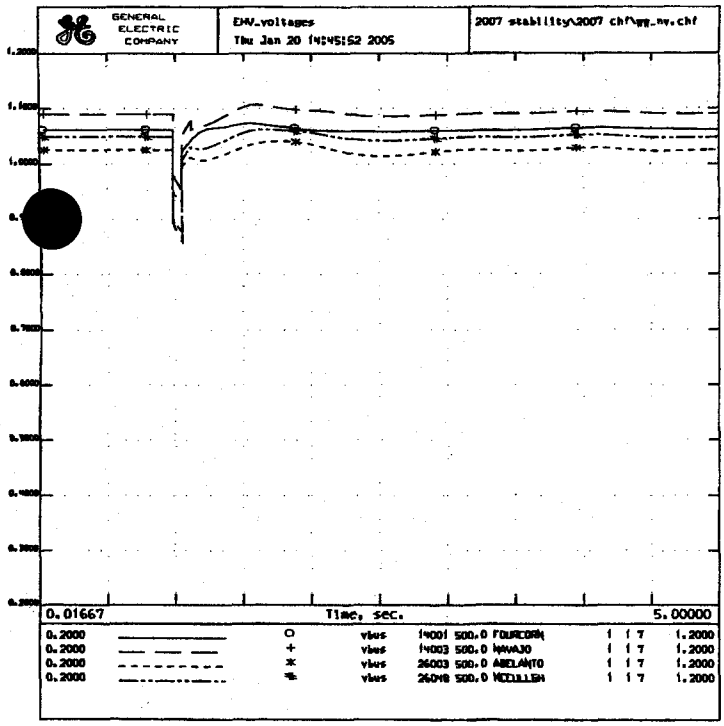


SAGUARO FLT SAG-CH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
CH STAB ofg 01/05g T=0 3P FLT SAG500g
R FLT W/SAG-CHg2007.dydgHSCC.bpt
Case for 10-Year Plan Stability



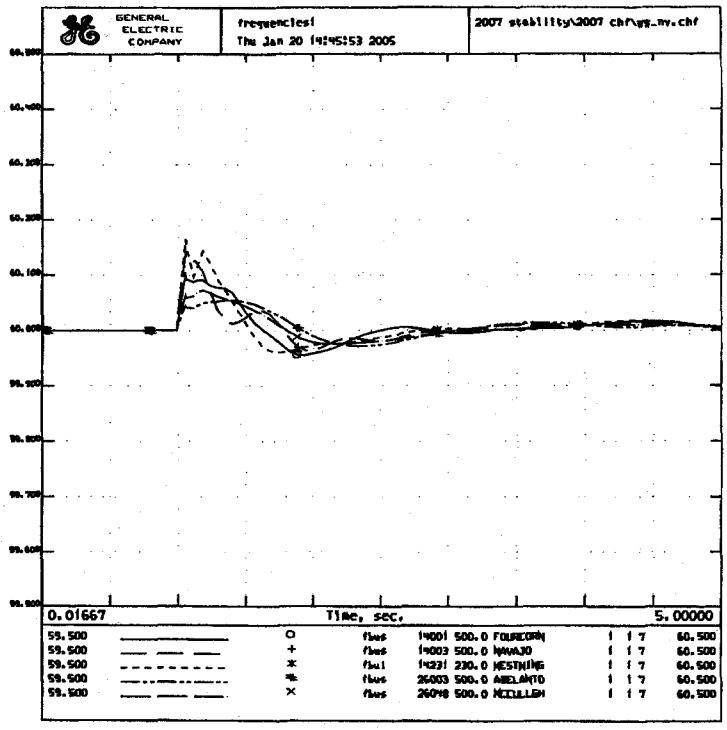
SAGUARO FLT SAG-CH LINE OUT
2007 HS2 BASE CASE
OCTOBER 13, 2004
SAG-CH STAB ofg 01/05g T=0 3P FLT SAG500g
%C CLR FLT W/SAG-CHg2007.dydgHSCC.bpt

2007 Case for 10-Year Plan Stability



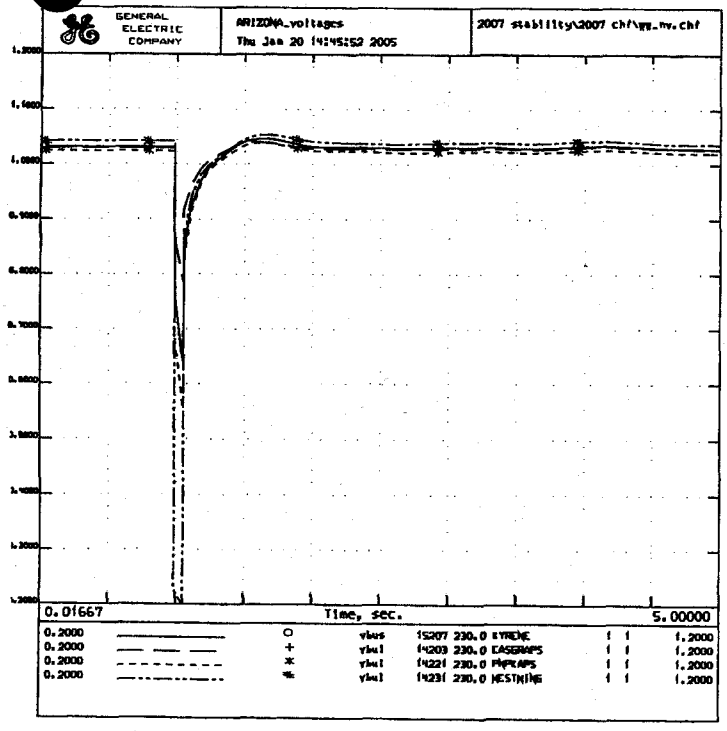
MM. FLT, MM-Nav line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MMG-NAV STAB; 1/05; T+0 3P FLT MM6500;FLSH CAPS MCP-YAV/YAV-MMG,
NAV-MCP/MMG+MC CLR FLT M/MMG-NAV;BC RE1N;2007.dyd MSCC.bat

2007 Case for 10-Year Plan Stability



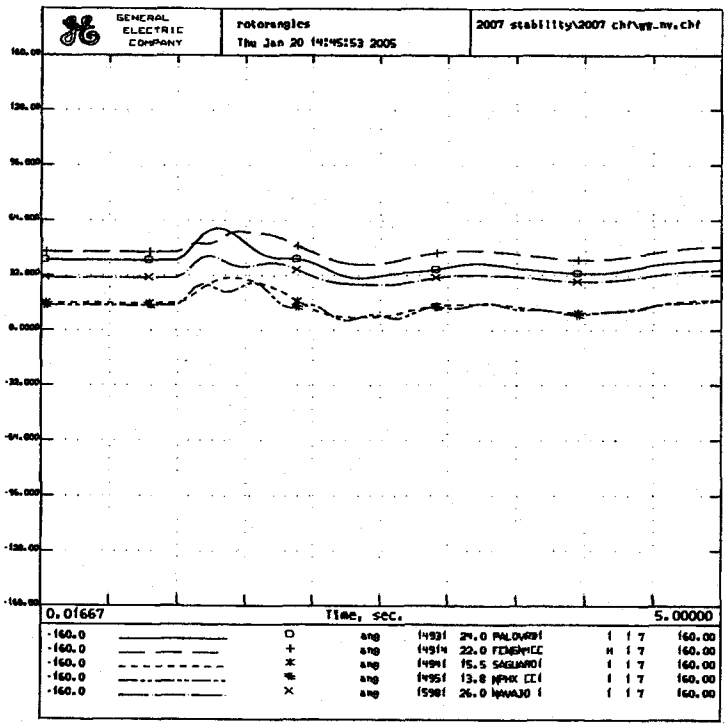
MM. FLT, MM-Nav line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MMG-NAV STAB; 1/05; T+0 3P FLT MM6500;FLSH CAPS MCP-YAV/YAV-MMG,
NAV-MCP/MMG+MC CLR FLT M/MMG-NAV;BC RE1N;2007.dyd MSCC.bat

2007 Case for 10-Year Plan Stability



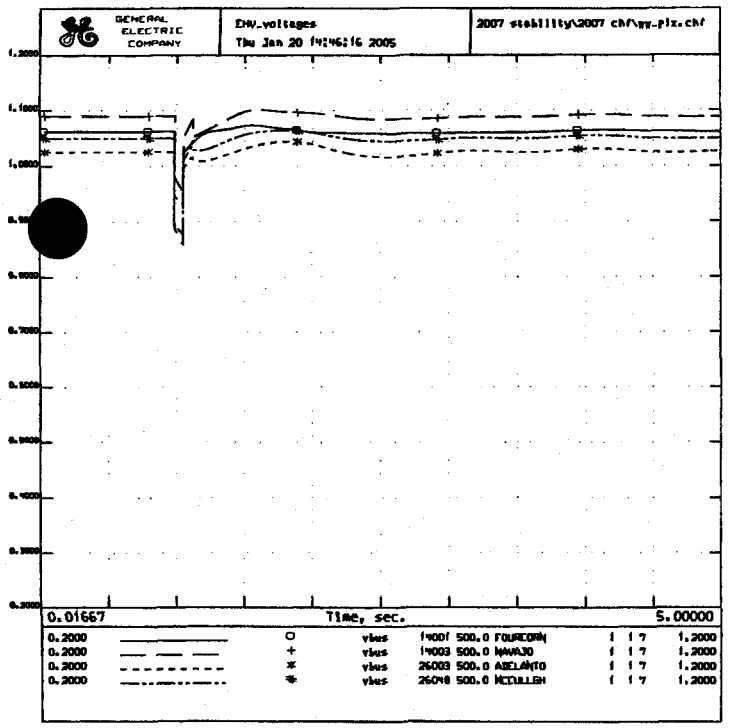
MM. FLT, MM-Nav line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NAV STAB; 1/05; T+0 3P FLT MM6500;FLSH CAPS MCP-YAV/YAV-MMG,
P/MMG+MC CLR FLT M/MMG-NAV;BC RE1N;2007.dyd MSCC.bat

Case for 10-Year Plan Stability



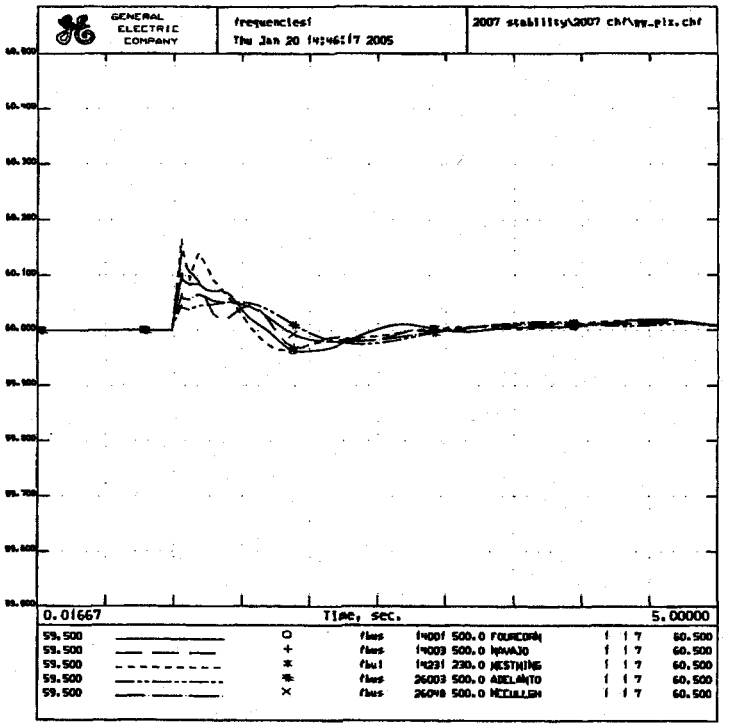
MM. FLT, MM-Nav line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MMG-NAV STAB; 1/05; T+0 3P FLT MM6500;FLSH CAPS MCP-YAV/YAV-MMG,
NAV-MCP/MMG+MC CLR FLT M/MMG-NAV;BC RE1N;2007.dyd MSCC.bat

2007 Case for 10-Year Plan Stability



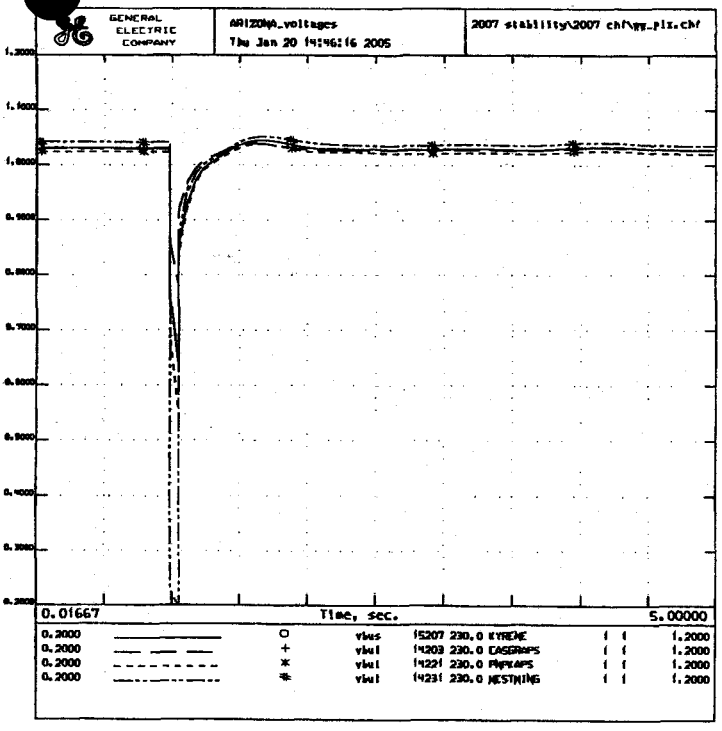
NM. FLT. NM-PV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NMG-YAV STAB1 1/05; T+0 3P FLT NM6500;FLSH CAPS NEP-YAV/YAV-NMG,
NAV-NEP/NMG+C CLR FLT N/NMG-PAL;BC RE1%;2007.dyd NSCC.bat

2007 Case for 10-Year Plan Stability



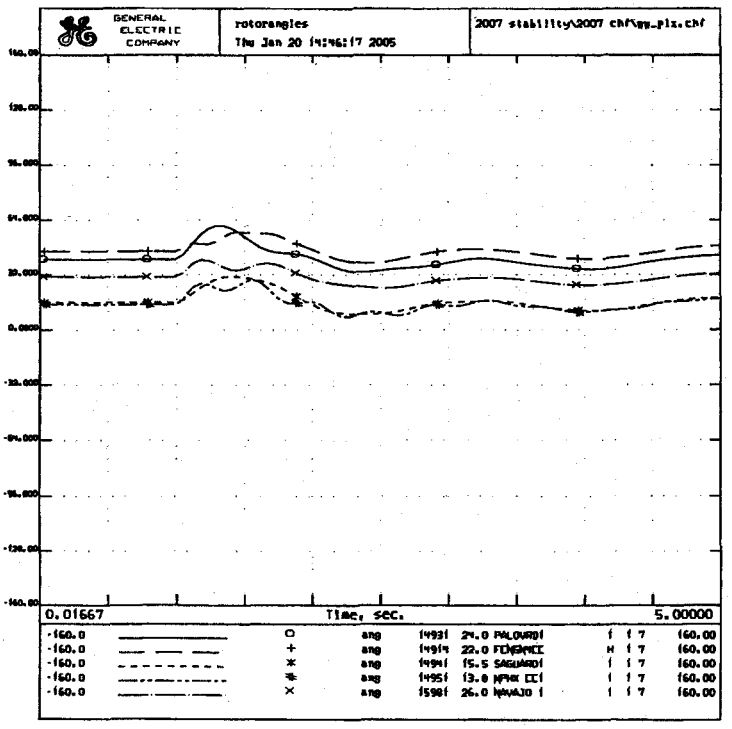
NM. FLT. NM-PV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NMG-YAV STAB1 1/05; T+0 3P FLT NM6500;FLSH CAPS NEP-YAV/YAV-NMG,
NAV-NEP/NMG+C CLR FLT N/NMG-PAL;BC RE1%;2007.dyd NSCC.bat

2007 Case for 10-Year Plan Stability



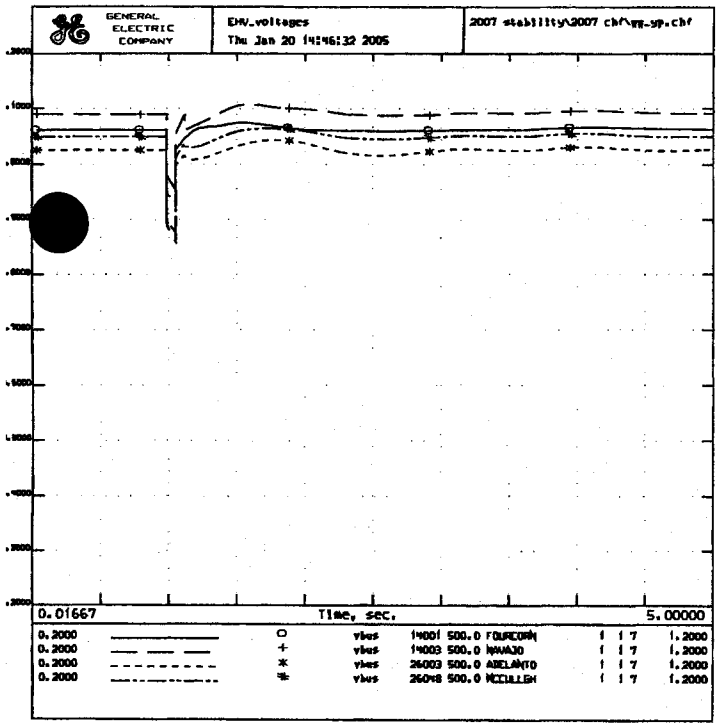
NM. FLT. NM-PV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible]YAV STAB1 1/05; T+0 3P FLT NM6500;FLSH CAPS NEP-YAV/YAV-NMG,
[illegible]P/NMG+C CLR FLT N/NMG-PAL;BC RE1%;2007.dyd NSCC.bat

[illegible]ase for 10-Year Plan Stability



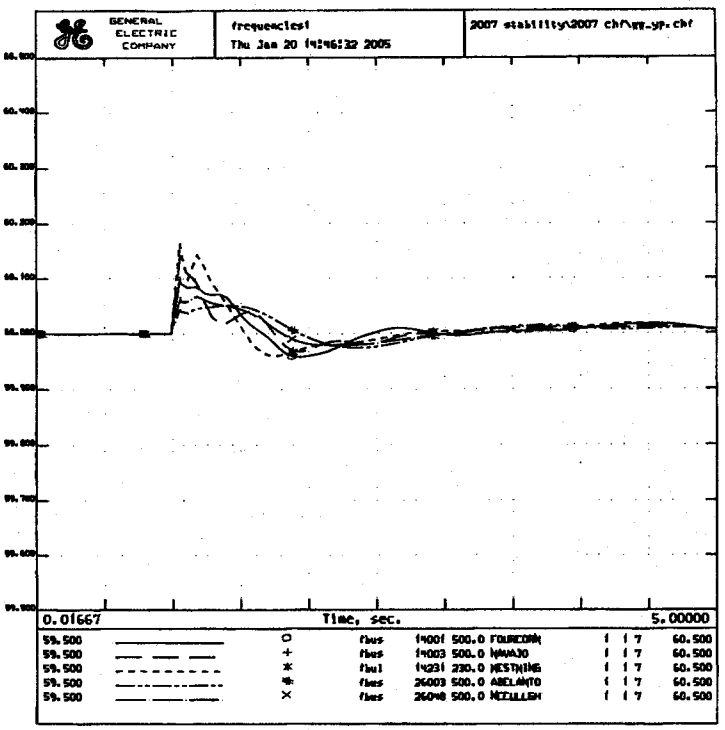
NM. FLT. NM-PV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
NMG-YAV STAB1 1/05; T+0 3P FLT NM6500;FLSH CAPS NEP-YAV/YAV-NMG,
NAV-NEP/NMG+C CLR FLT N/NMG-PAL;BC RE1%;2007.dyd NSCC.bat

2007 Case for 10-Year Plan Stability



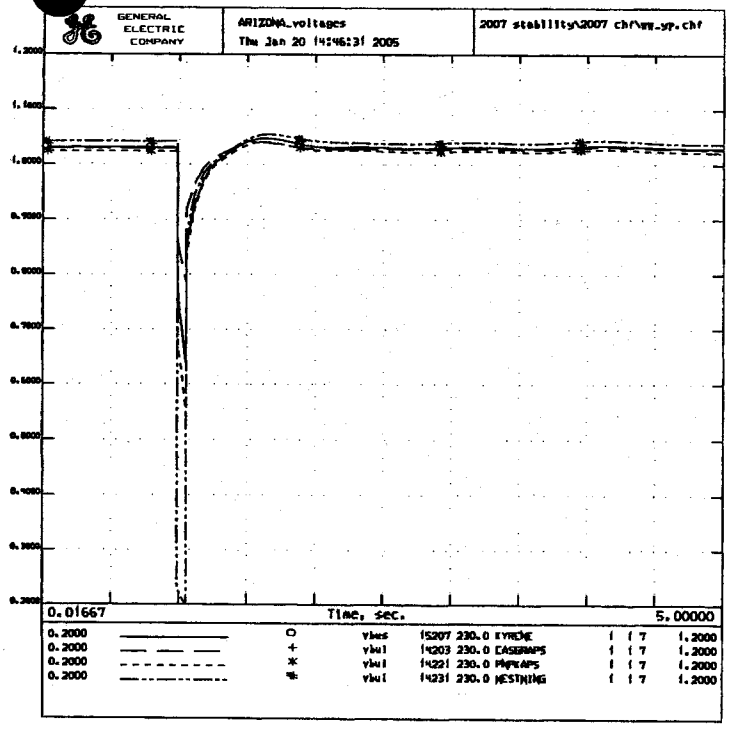
MH. FLT, MH-YAV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MHG-YAV STAB; 1/05; T=0 3P FLT MH6500;FLSH CAPS MKP-YAV/YAV-MHG,
MAV-MKP/MHG=4C CLR FLT M/MHG-YAV;8C REIN;2007.dyd MSCC.bat

2007 Case for 10-Year Plan Stability



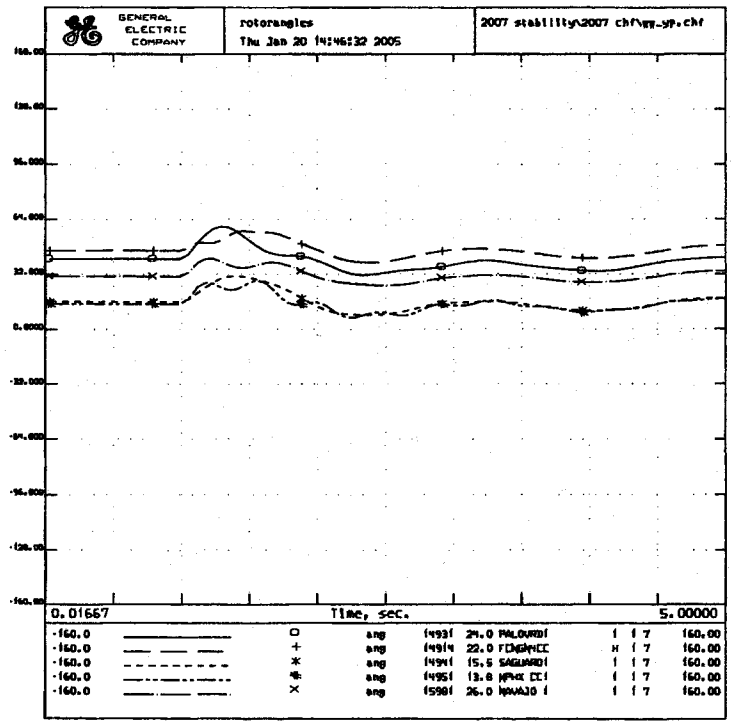
MH. FLT, MH-YAV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MHG-YAV STAB; 1/05; T=0 3P FLT MH6500;FLSH CAPS MKP-YAV/YAV-MHG,
MAV-MKP/MHG=4C CLR FLT M/MHG-YAV;8C REIN;2007.dyd MSCC.bat

2007 Case for 10-Year Plan Stability



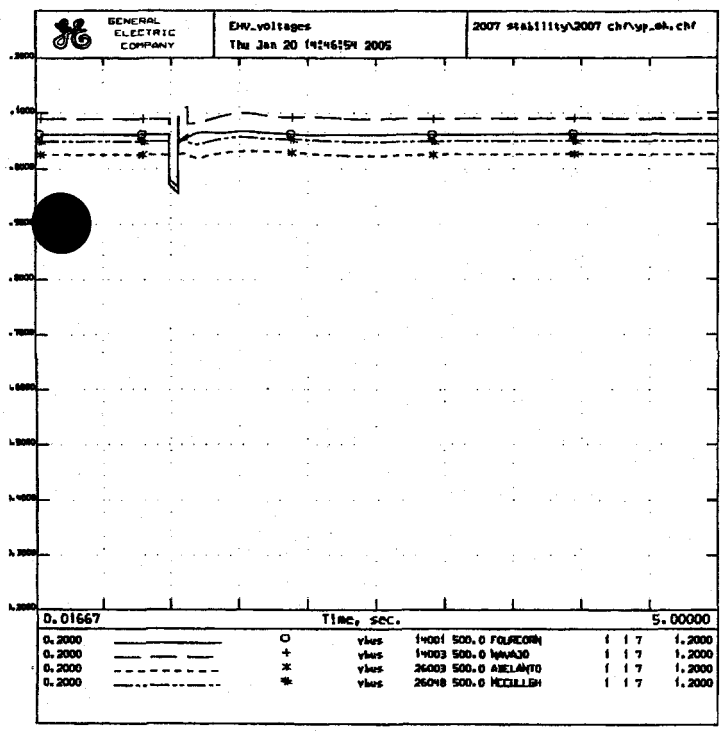
MH. FLT, MH-YAV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
[illegible]AV STAB; 1/05; T=0 3P FLT MH6500;FLSH CAPS MKP-YAV/YAV-MHG,
[illegible]P/MHG=4C CLR FLT M/MHG-YAV;8C REIN;2007.dyd MSCC.bat

[illegible]ase for 10-Year Plan Stability



MH. FLT, MH-YAV line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
MHG-YAV STAB; 1/05; T=0 3P FLT MH6500;FLSH CAPS MKP-YAV/YAV-MHG,
MAV-MKP/MHG=4C CLR FLT M/MHG-YAV;8C REIN;2007.dyd MSCC.bat

2007 Case for 10-Year Plan Stability



YAV, FLT, Yav-Moen line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
YAV STAB; 1/05; T+0 3P FLT YP500;FLSH CAPS MKP-YAV/YAV-MM5,
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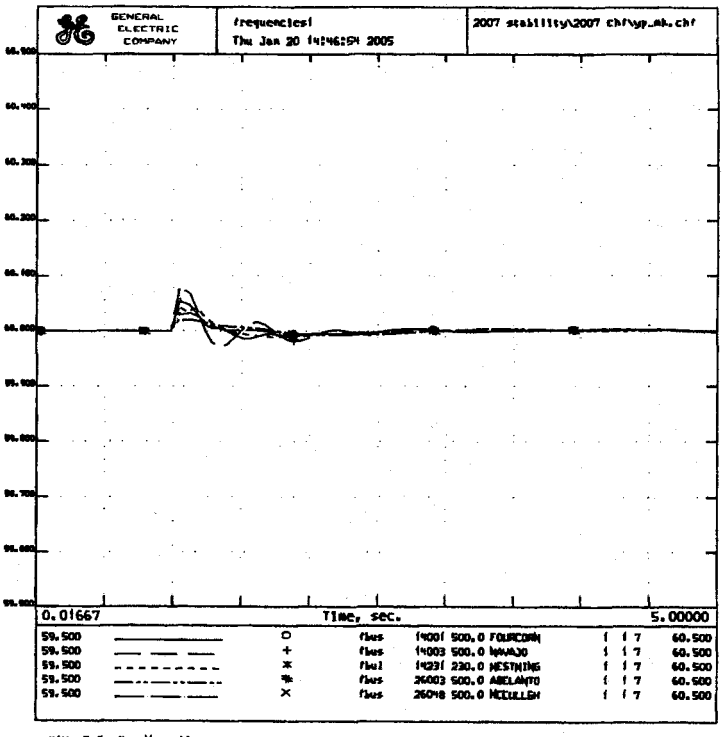
2007 Case for 10-Year Plan Stability



YAV, FLT, Yav-Moen line out
2007 HS2 BASE CASE
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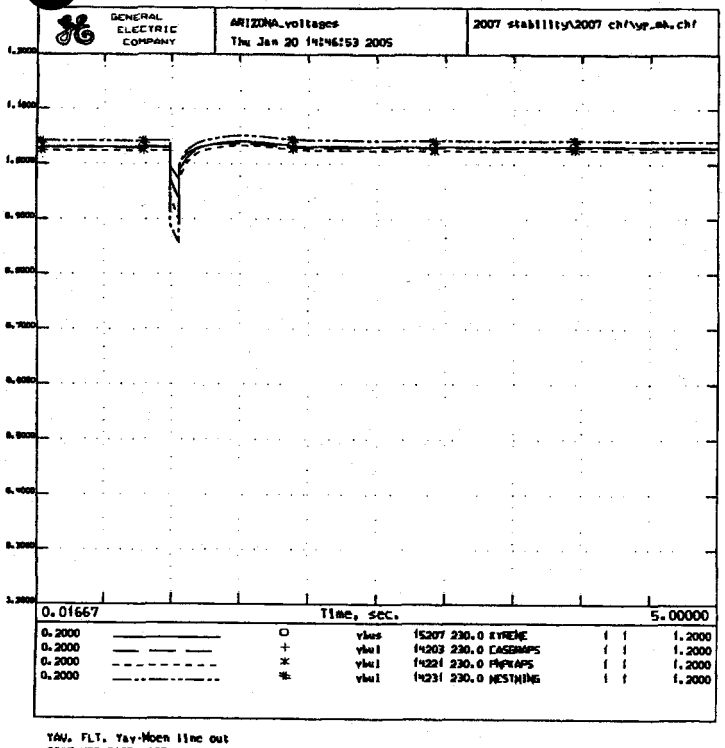
2007 Case for 10-Year Plan Stability



YAV, FLT, Yav-Moen line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
STAB; 1/05; T+0 3P FLT YP500;FLSH CAPS MKP-YAV/YAV-MM5,
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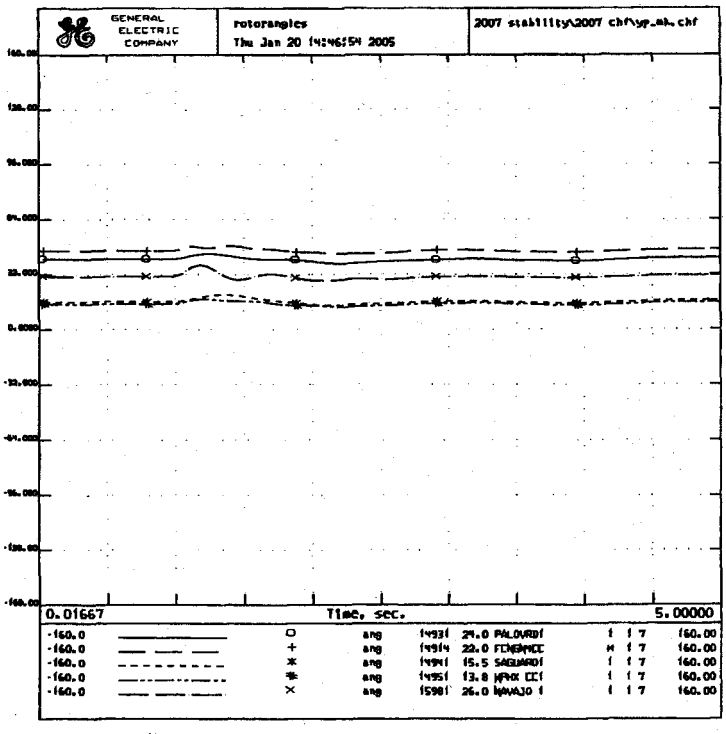
Case for 10-Year Plan Stability



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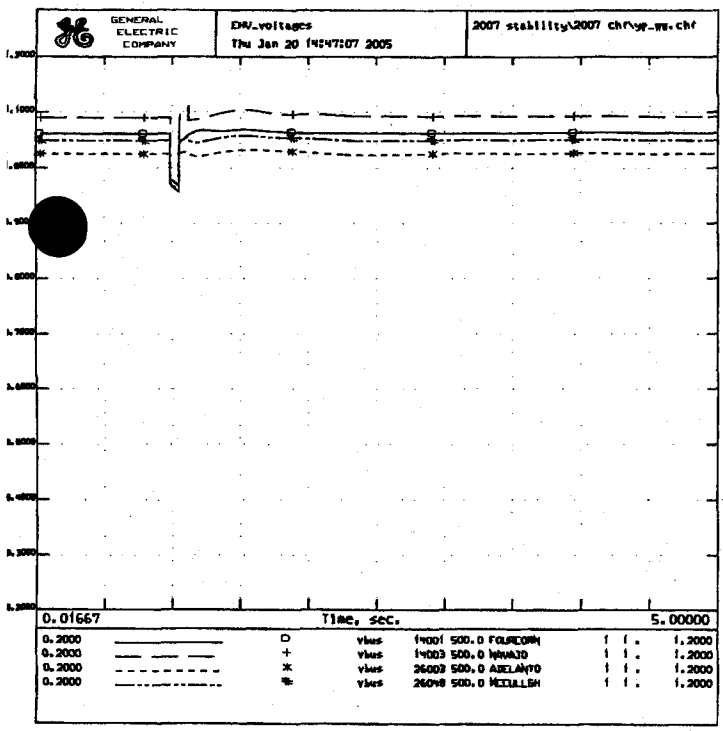
2007 Case for 10-Year Plan Stability



YAV, FLT, Yav-MM line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
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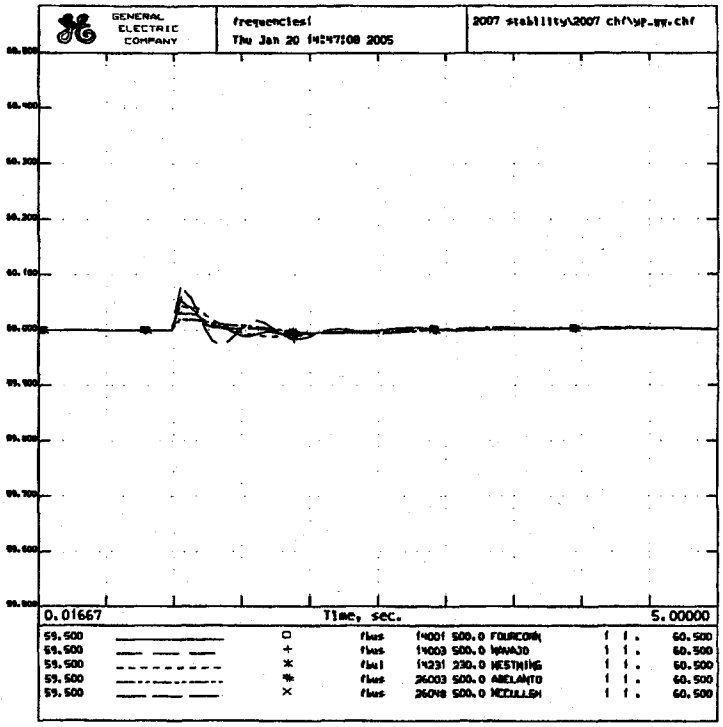
2007 Case for 10-Year Plan Stability



YAV, FLT, Yav-MM line out
2007 HS2 BASE CASE
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YAV STAB; 1/05; T=0 3P FLT YP500;FLSH CAPS MEP-YAV/YAV-MMG,
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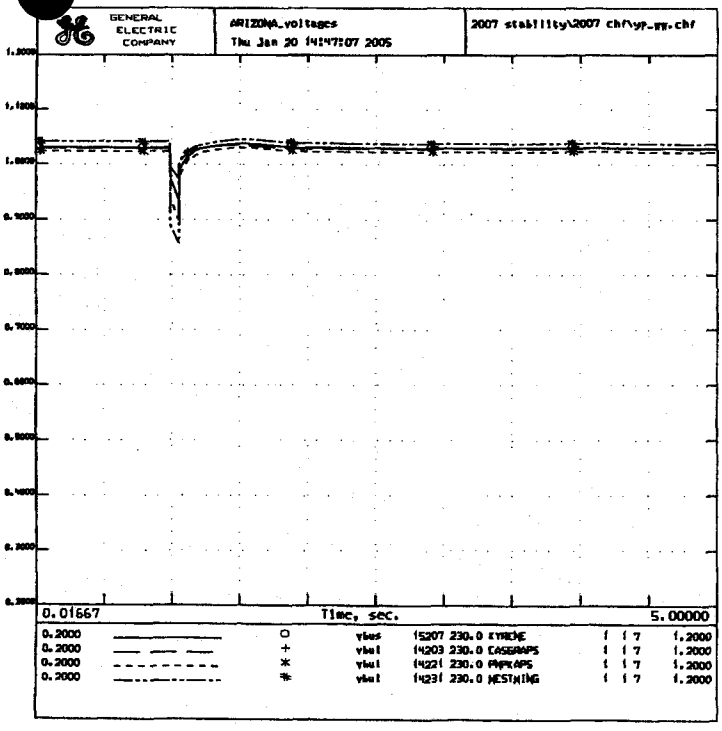
2007 Case for 10-Year Plan Stability



YAV, FLT, Yav-MM line out
2007 HS2 BASE CASE
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YAV STAB; 1/05; T=0 3P FLT YP500;FLSH CAPS MEP-YAV/YAV-MMG,
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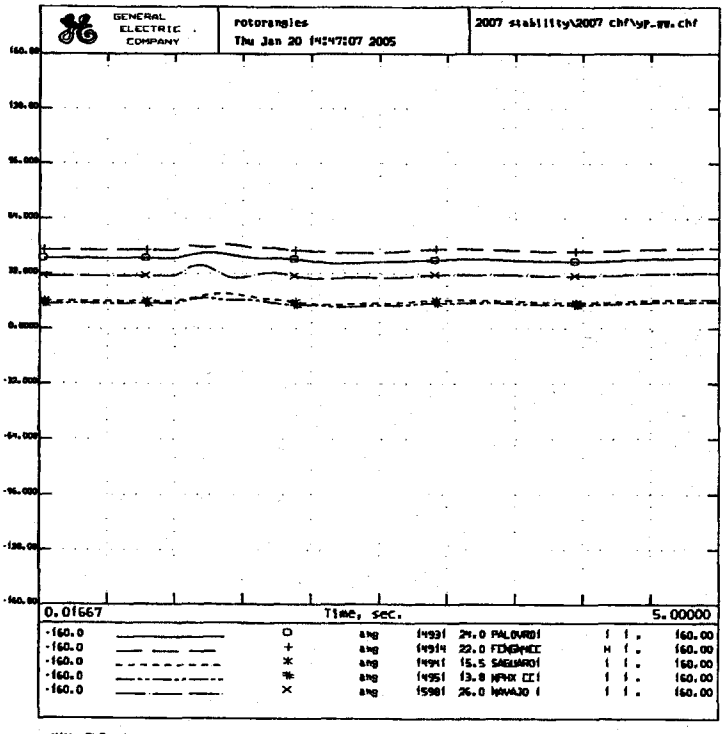
Case for 10-Year Plan Stability



YAV, FLT, Yav-MM line out
2007 HS2 BASE CASE
OCTOBER 13, 2004
YAV STAB; 1/05; T=0 3P FLT YP500;FLSH CAPS MEP-YAV/YAV-MMG,
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2007 Case for 10-Year Plan Stability

APPENDIX C
2014
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APPENDIX C

2014
Stability Plots

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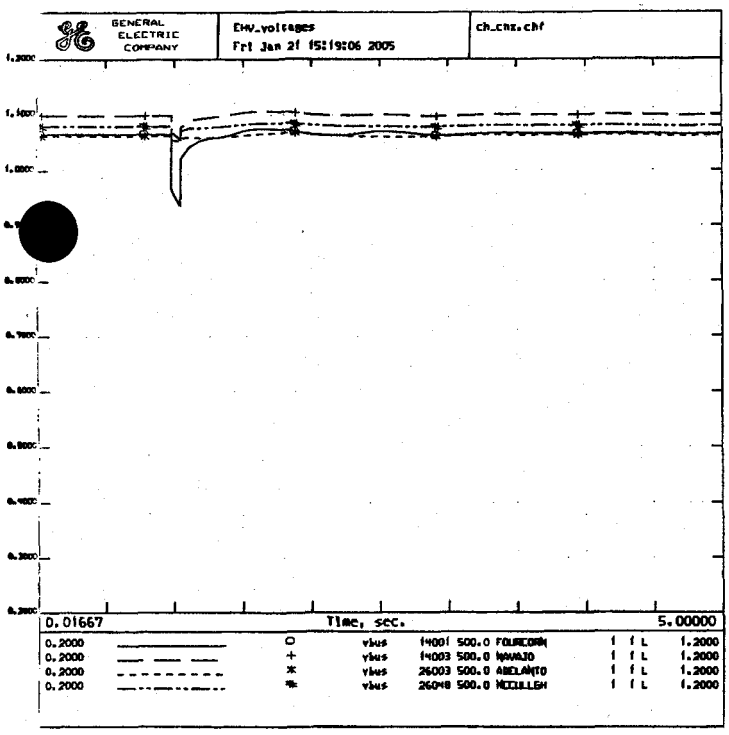
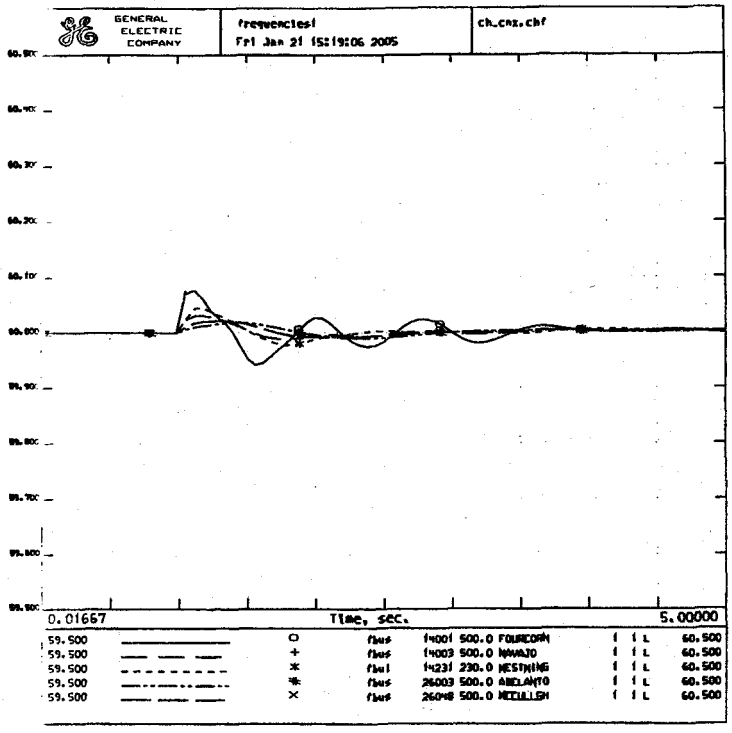


CHOLLA 500KV FLT CH-CNX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
CH-CNX STAB; 1/0S; T+0 3P FLT CH500;4C CLR FLT
H/CH-CNX;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



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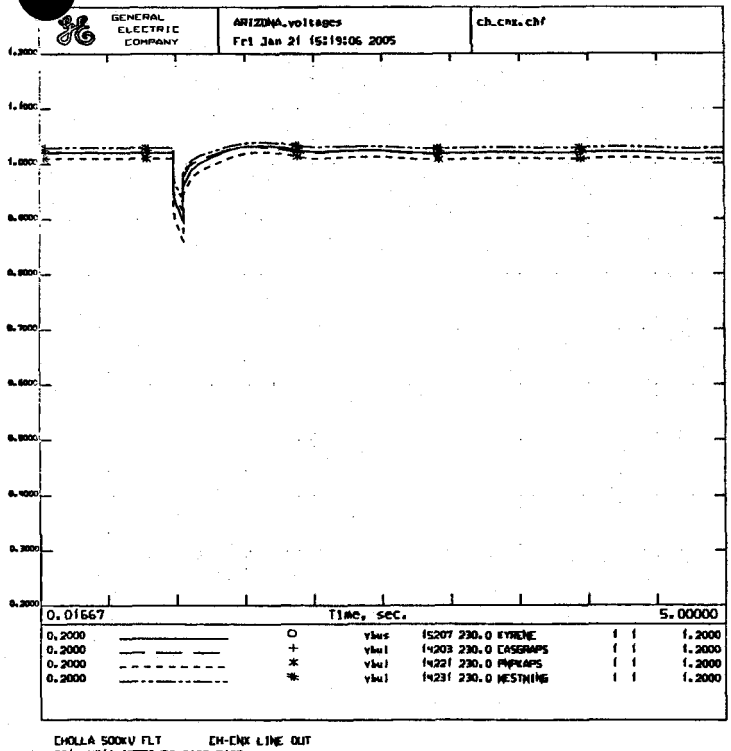

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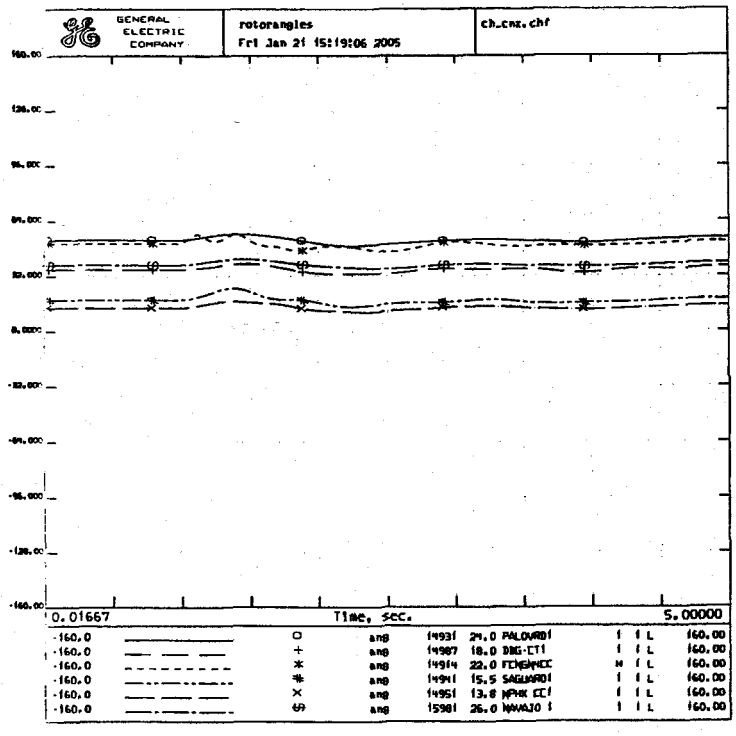

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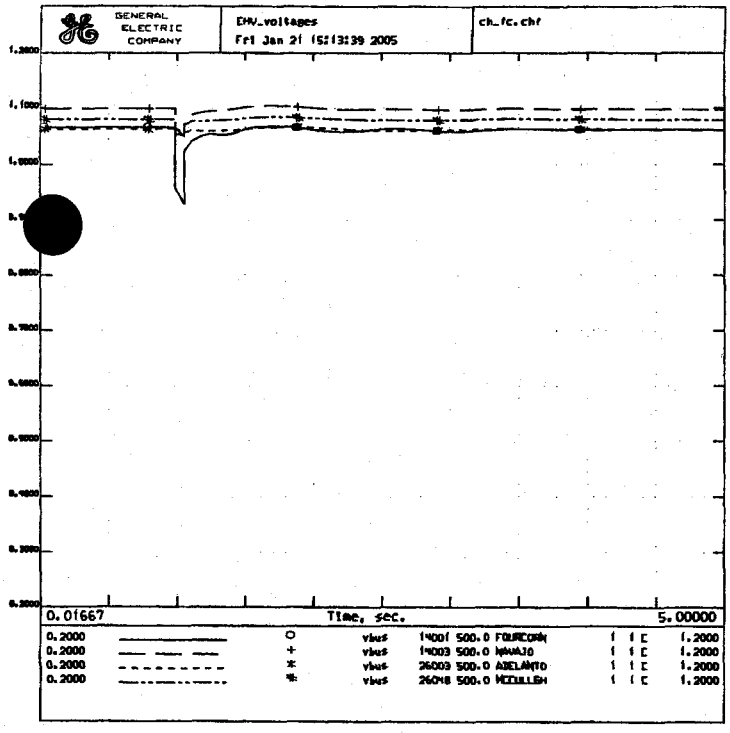
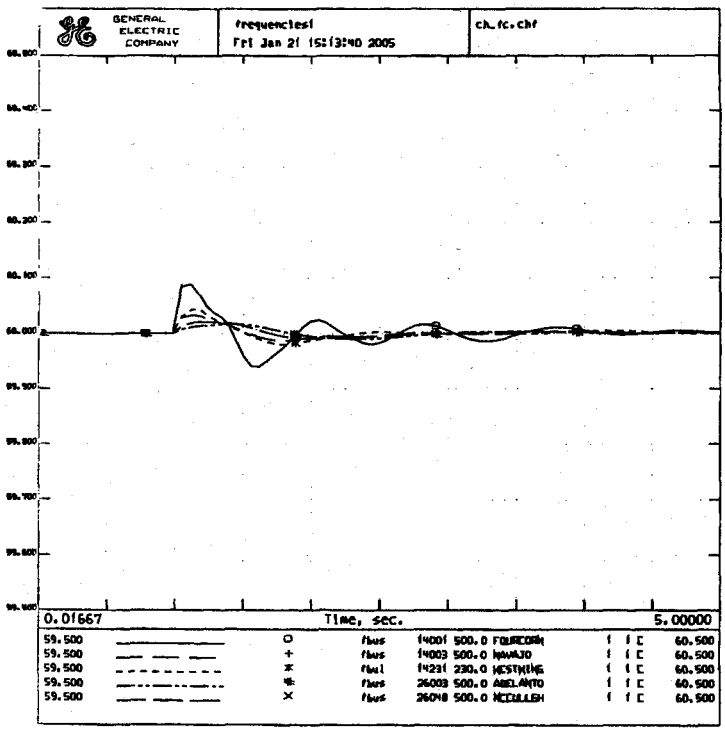


CHOLLA FLT CH-FC LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
CH-FC STAB; 01/05; T+0 3P FLT CH3NS;FLSH FC-CH CAPS;
4C CLR FLT N/CH-FC ;(;2014.dyd;)SCC.bpt

2014 Case for 10-Year Plan Stability



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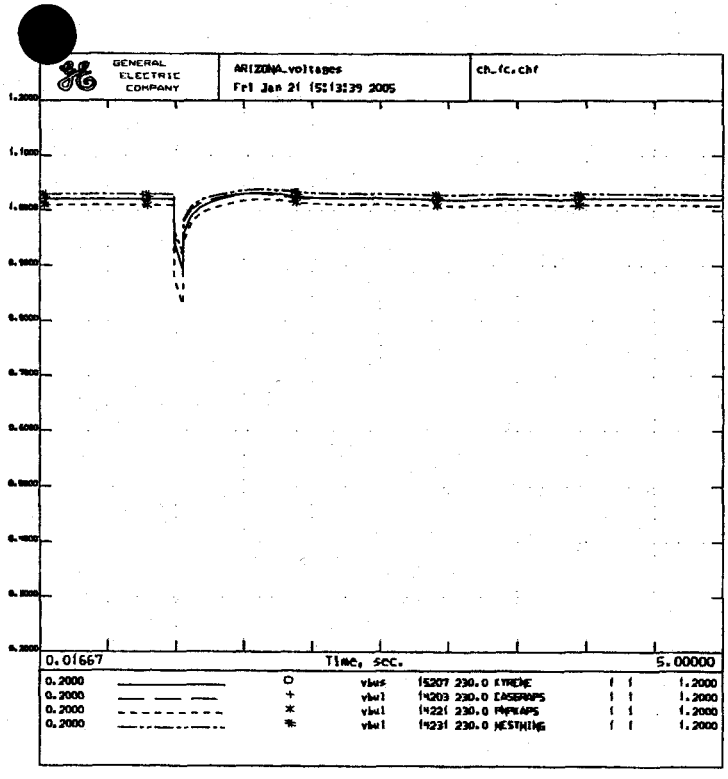

CHOLLA FLT CH-FC LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
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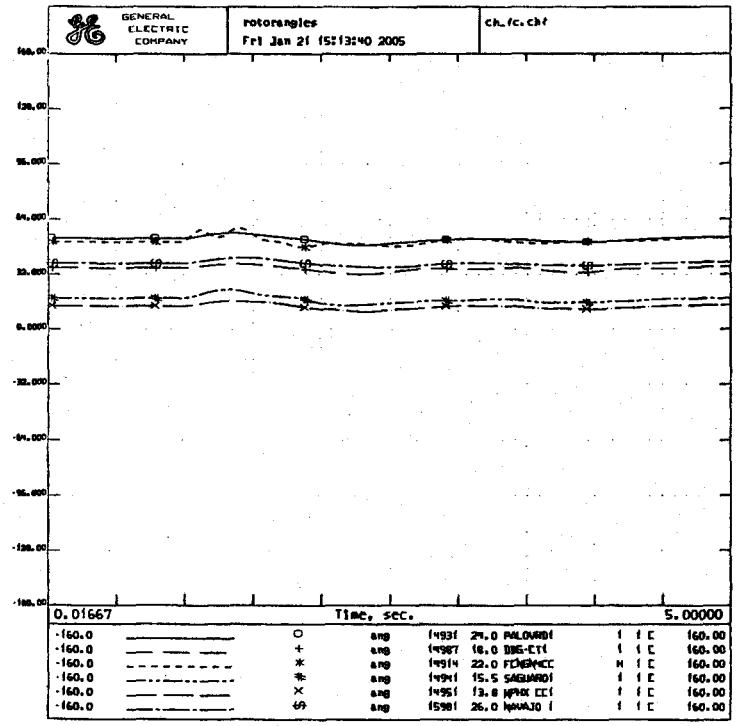
Case for 10-Year Plan Stability



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CH-FC STAB; 01/05; T+0 3P FLT CH3NS;FLSH FC-CH CAPS;
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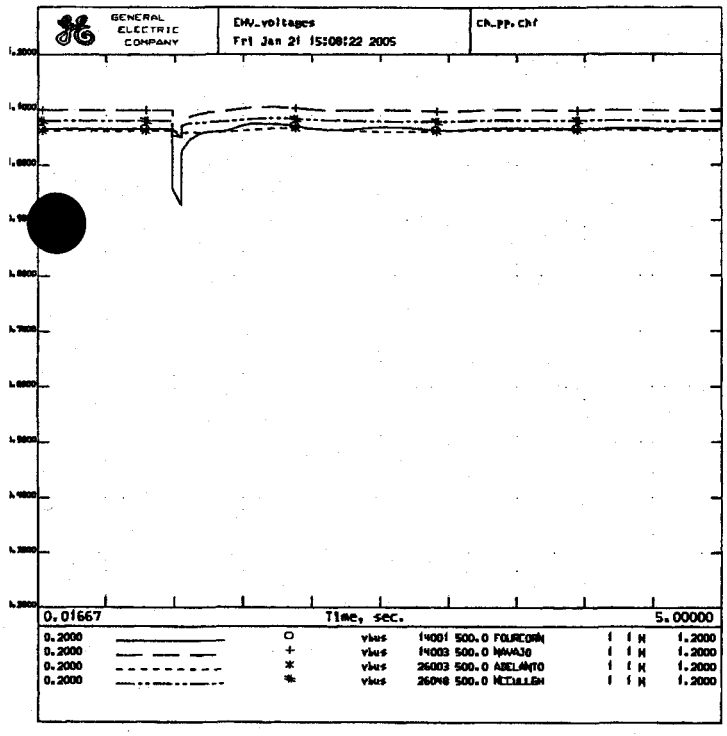
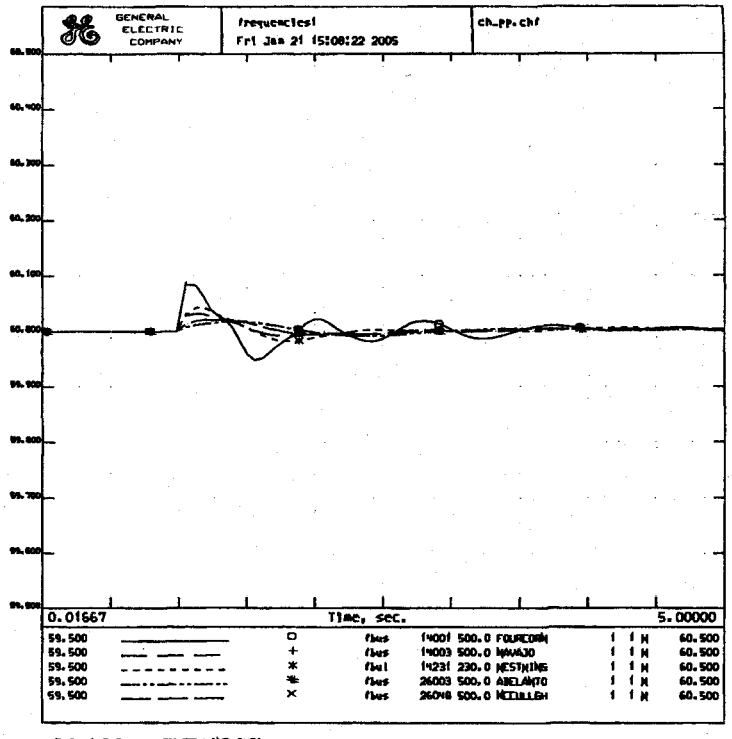


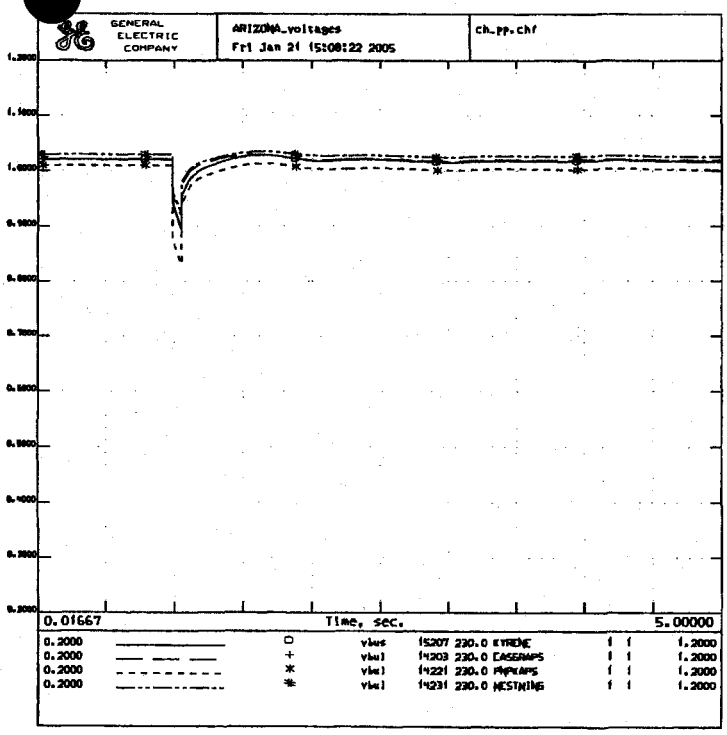
CHOLLA FLT CH-PP LINE OUT1
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
CH-PP STAB1 01/05: T+0 3P FLT CH345;FLSH FC-CH CAPS;
4C CLR FLT W/CH-PP 1;18C REIN CAPS;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



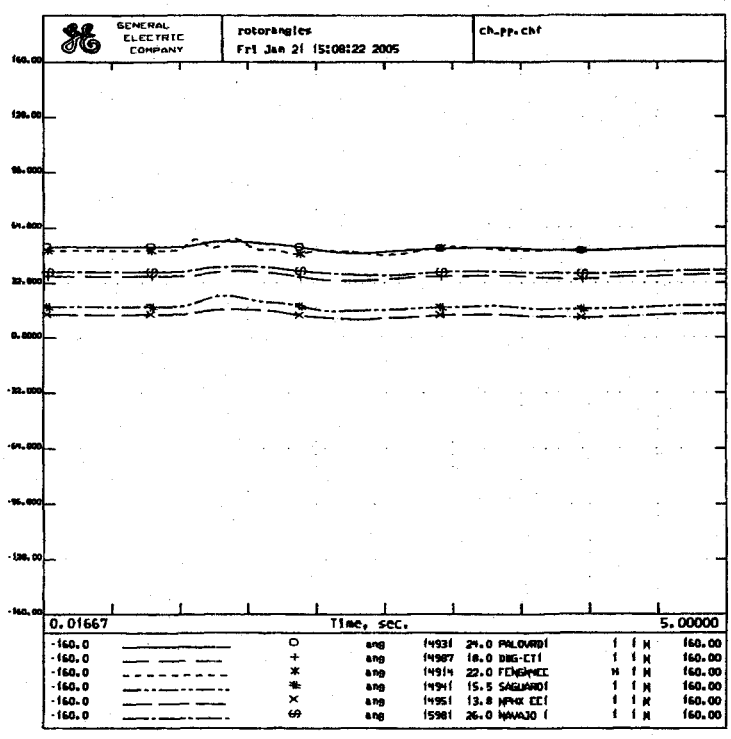
CHOLLA FLT CH-PP LINE OUT1
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
CH-PP STAB1 01/05: T+0 3P FLT CH345;FLSH FC-CH CAPS;
4C CLR FLT W/CH-PP 1;18C REIN CAPS;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



CHOLLA FLT CH-PP LINE OUT1
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
STAB1 01/05: T+0 3P FLT CH345;FLSH FC-CH CAPS;
FLT W/CH-PP 1;18C REIN CAPS;2014.dyd;HSCC.bpt

Case for 10-Year Plan Stability



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2014 HS1A APPROVED BASE CASE
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CH-PP STAB1 01/05: T+0 3P FLT CH345;FLSH FC-CH CAPS;
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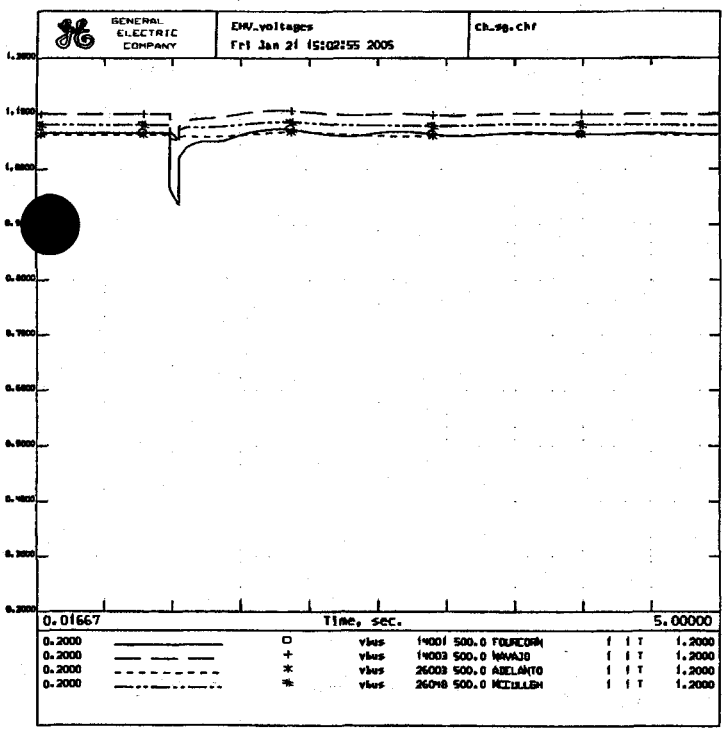
2014 Case for 10-Year Plan Stability



CHOLLA 500KV FLT CH-SG LINE OUT
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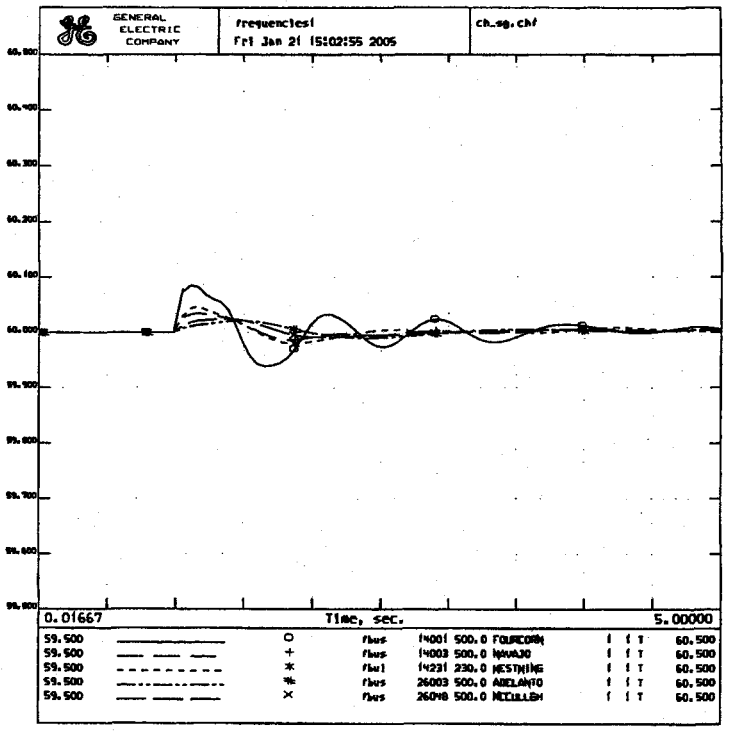
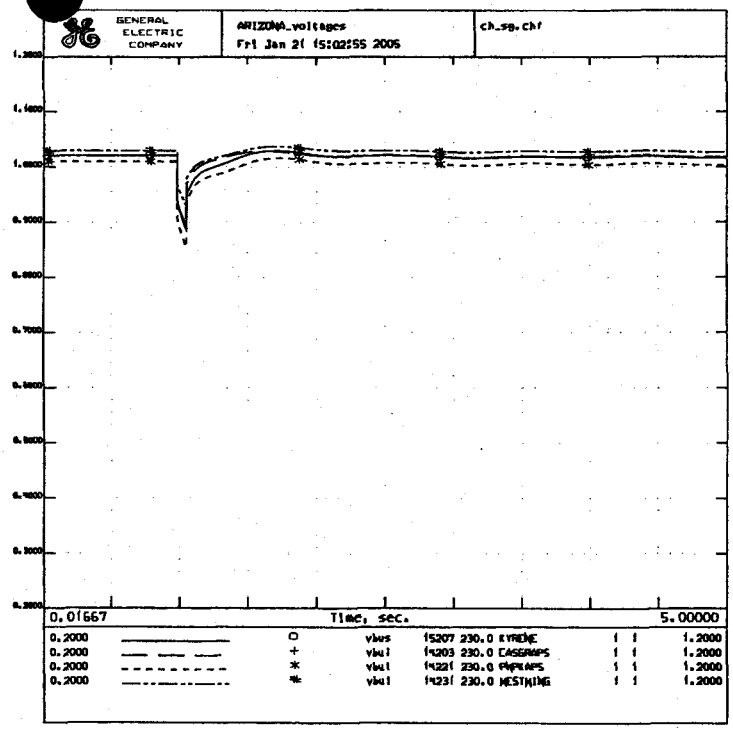
CH-SG STAB: 1/0S: T+0 3P FLT CH500:4C CLR FLT
N/CH-SG:2014.dyd:NSCC.bpt

2014 Case for 10-Year Plan Stability



CHOLLA 500KV FLT CH-SG LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
CH-SG STAB: 1/0S: T+0 3P FLT CH500:4C CLR FLT
N/CH-SG:2014.dyd:NSCC.bpt

2014 Case for 10-Year Plan Stability



CHOLLA 500KV FLT CH-SG LINE OUT
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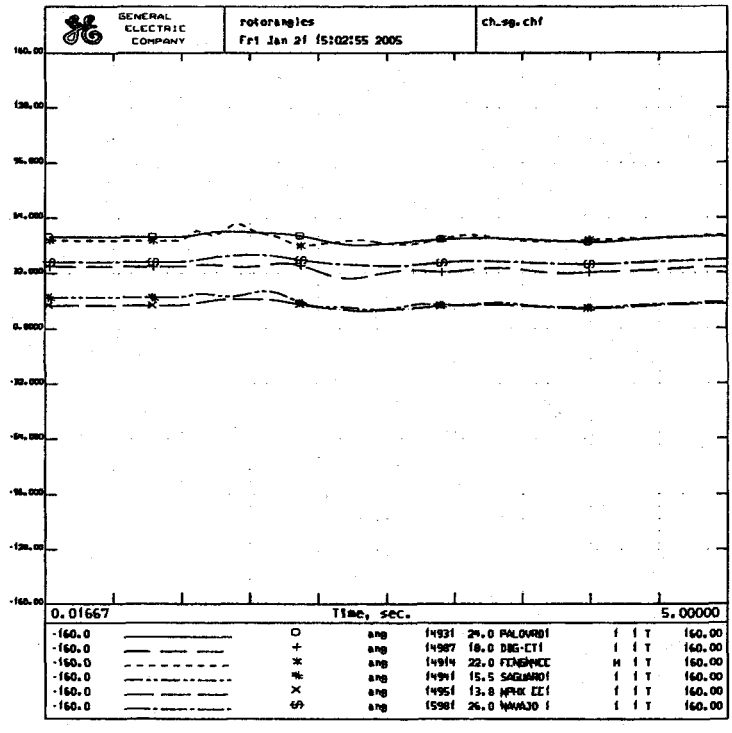
SG STAB: 1/0S: T+0 3P FLT CH500:4C CLR FLT
SG:2014.dyd:NSCC.bpt
Case for 10-Year Plan Stability



CHOLLA 500KV FLT CH-SG LINE OUT
2014 HS1A APPROVED BASE CASE
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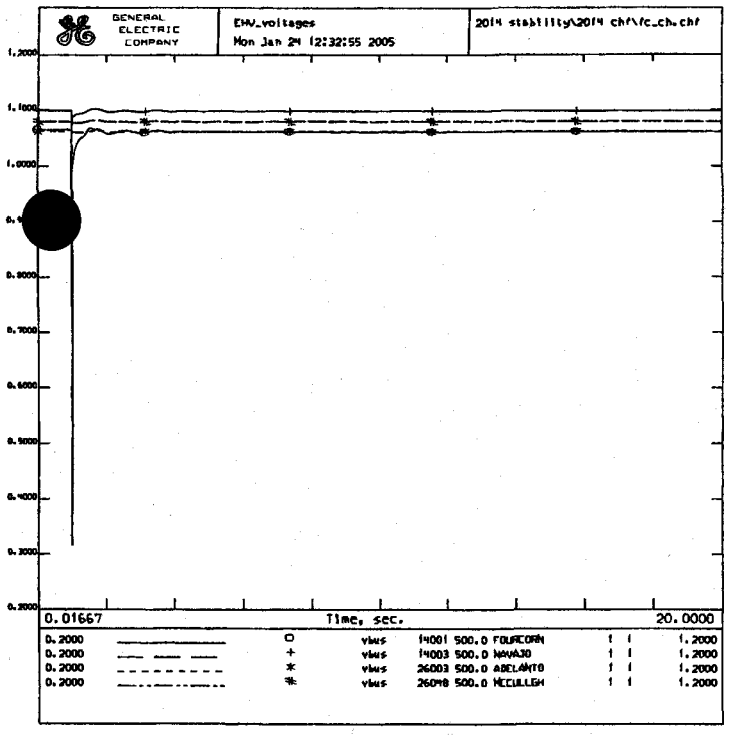
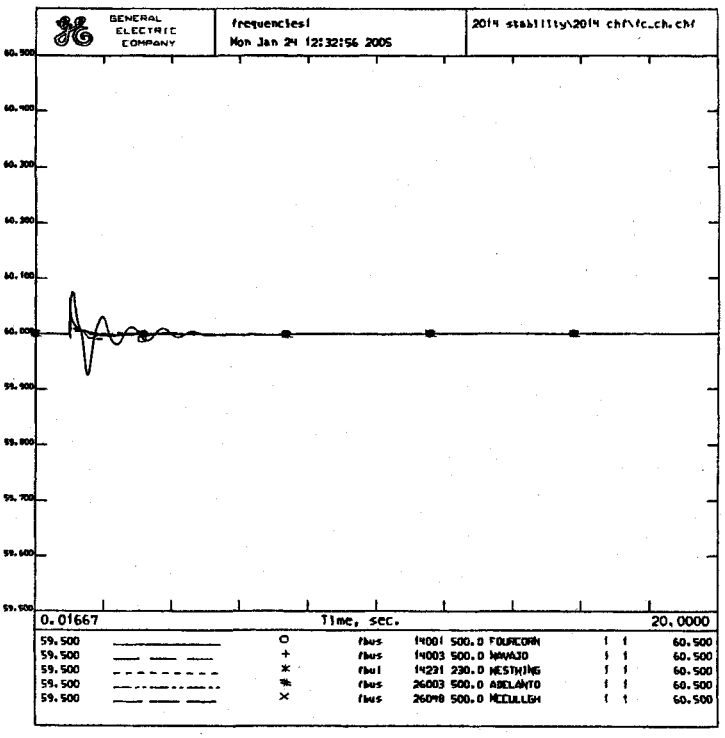
N/CH-SG:2014.dyd:NSCC.bpt

2014 Case for 10-Year Plan Stability



WESTERN ELECTRICITY COORDINATING COUNCIL
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004

2014 Case for 10-Year Plan Stability



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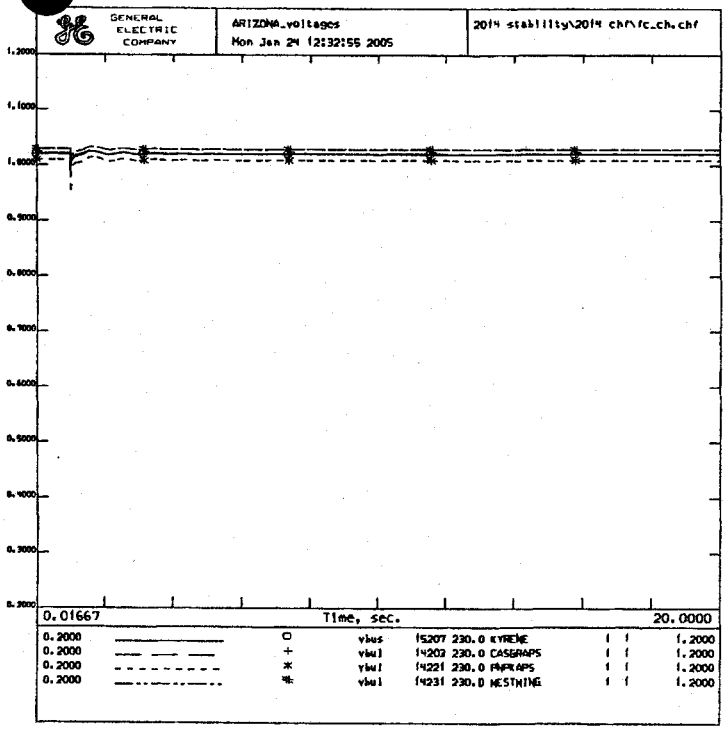

WESTERN ELECTRICITY COORDINATING COUNCIL
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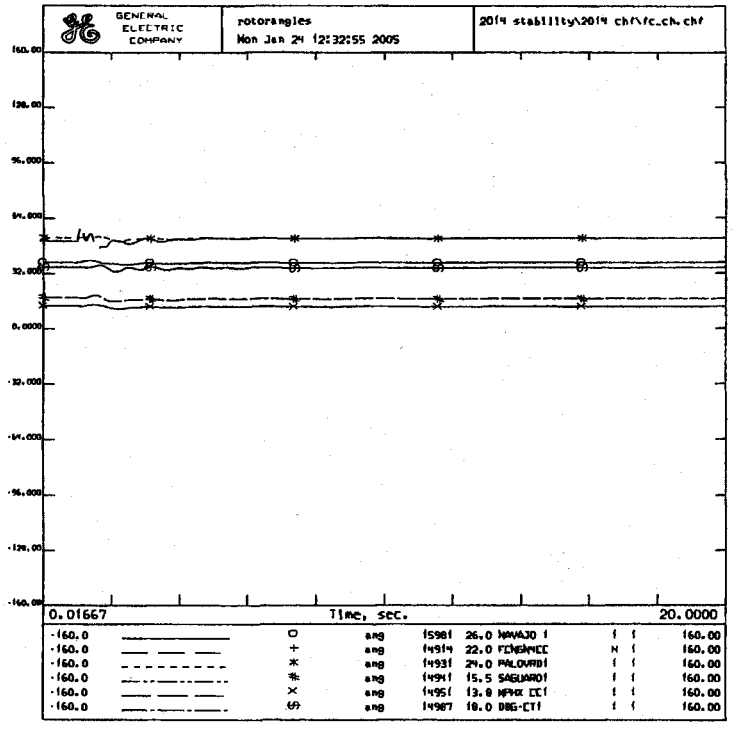
2014 Case for 10-Year Plan Stability



WESTERN ELECTRICITY COORDINATING COUNCIL
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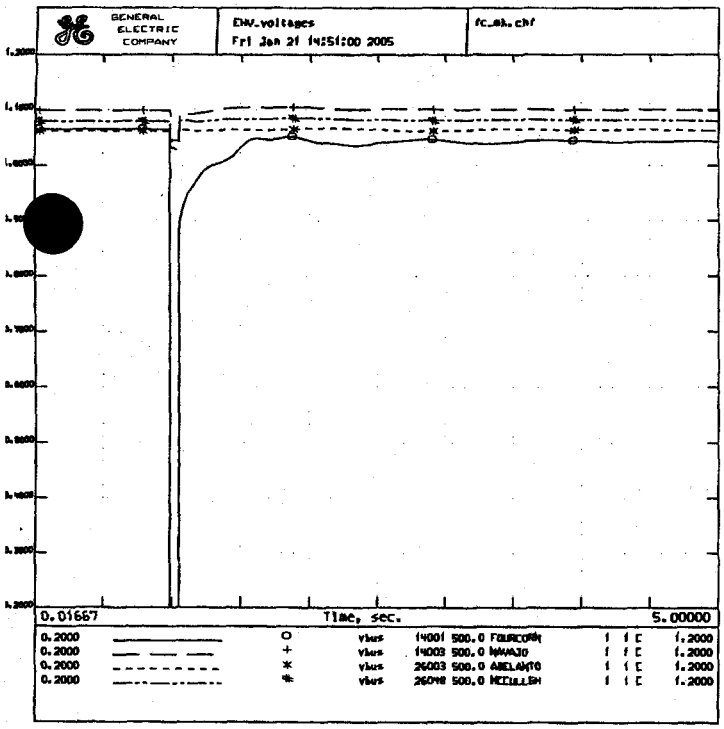

FOUR CORNERS FLT500 FC-Mk out
2014 MSIA APPROVED BASE CASE
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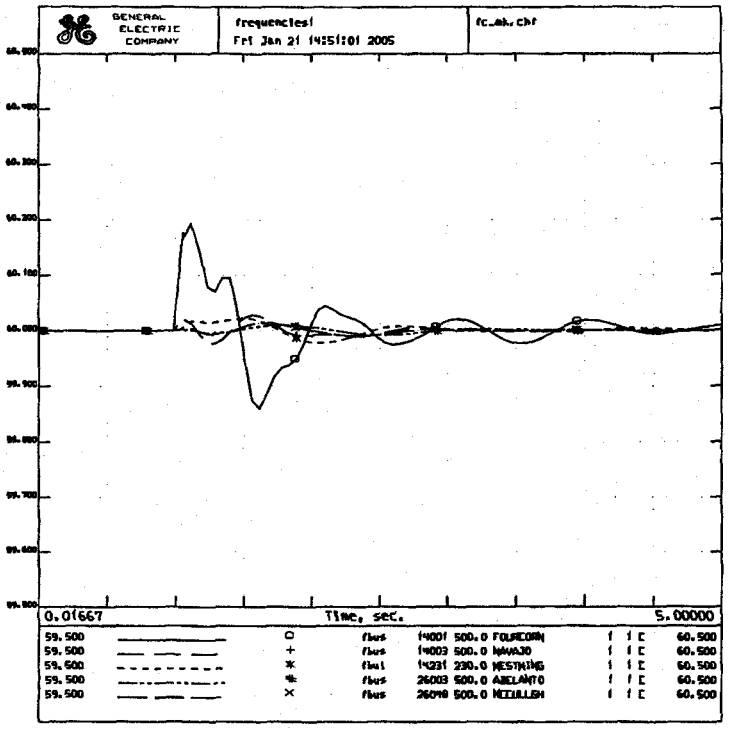
FC-Mk STAB; 1/05; T+0 3P FLT FC500;10% FLT DMPING;FLSH
CAPS FC-Mk/NV-Mk;4C CLR FLT N/FC-Mk;8C REIN CAPS;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



FOUR CORNERS FLT500 FC-Mk out
2014 MSIA APPROVED BASE CASE
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FC-Mk STAB; 1/05; T+0 3P FLT FC500;10% FLT DMPING;FLSH
CAPS FC-Mk/NV-Mk;4C CLR FLT N/FC-Mk;8C REIN CAPS;2014.dyd;MSCC.bpt

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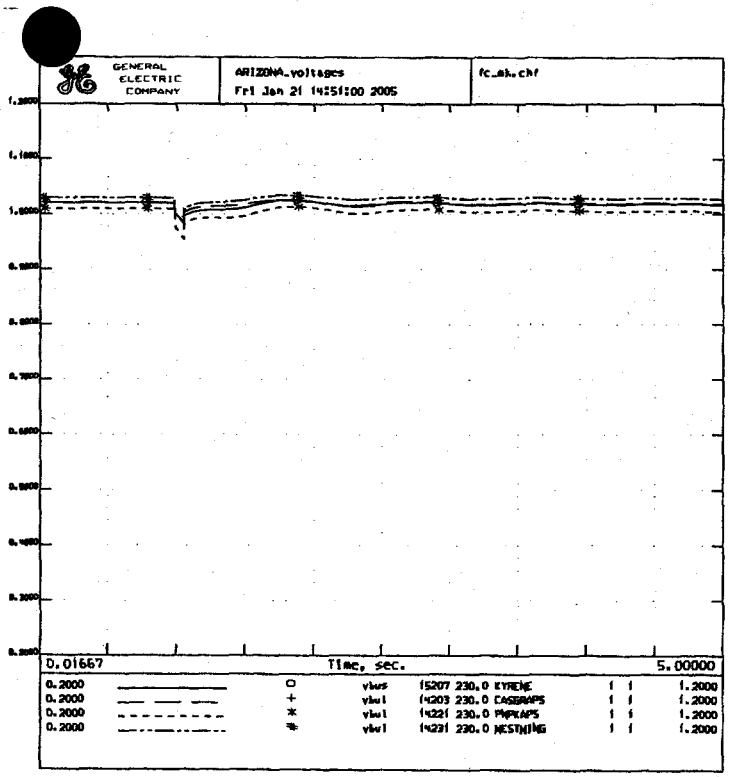

FOUR CORNERS FLT500 FC-Mk out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
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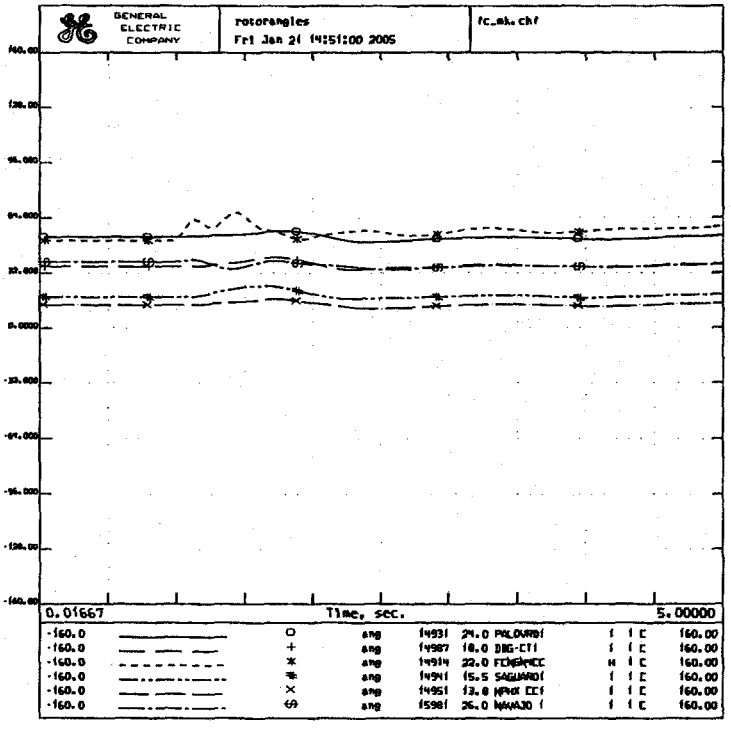
[illegible]FC-Mk/NV-Mk;4C CLR FLT N/FC-Mk;8C REIN CAPS;2014.dyd;MSCC.bpt

[illegible] Case for 10-Year Plan Stability



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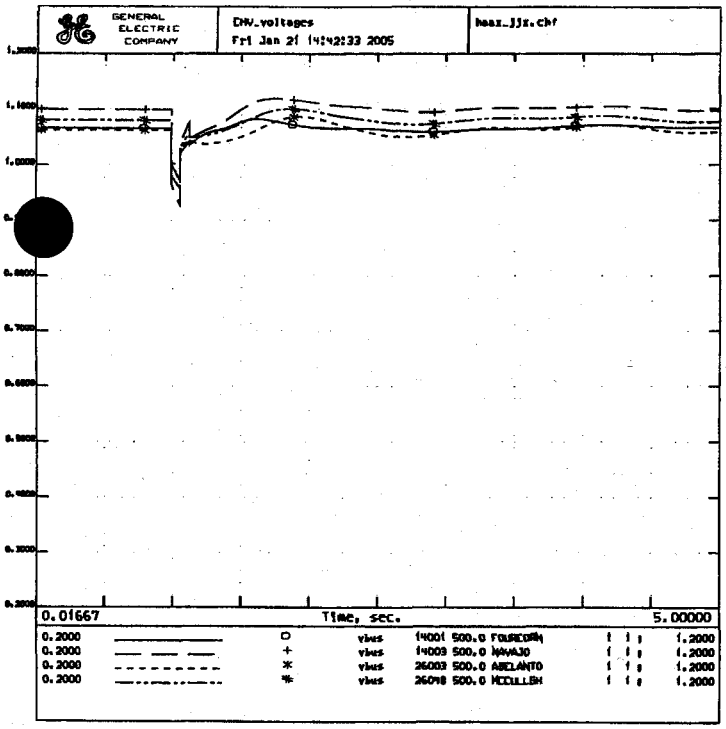
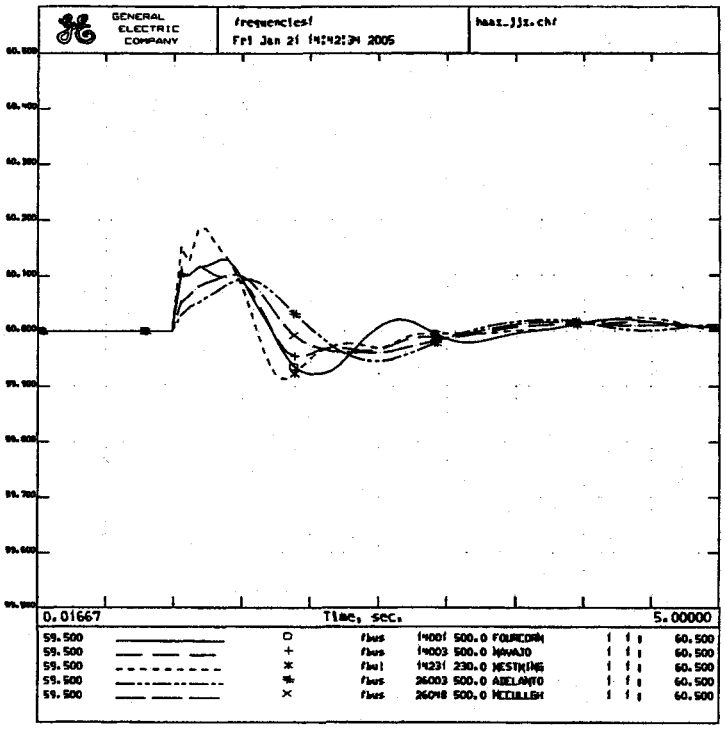
CAPS FC-Mk/NV-Mk;4C CLR FLT N/FC-Mk;8C REIN CAPS;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



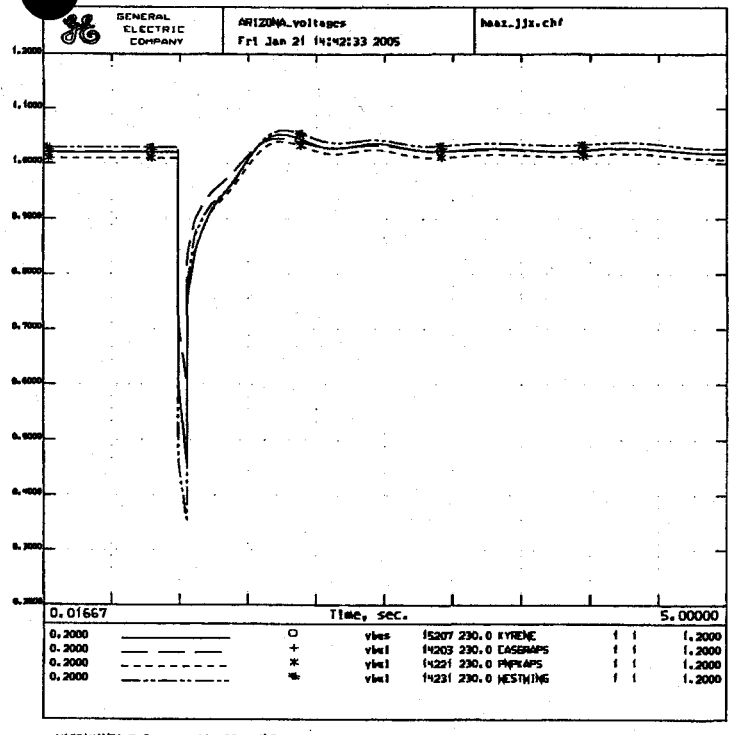
HASSAYAMPA FLT HAAX-JJX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
HAAX-JJX STAB; 01/05; T+0 3P FLT HAAX500;10% FLT BMPING;FLSH CAPS
HV-HK/HK-YV,PLX-DEX/NG;4C CLR FLT H/HAAX-JJX;8C RE1N;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



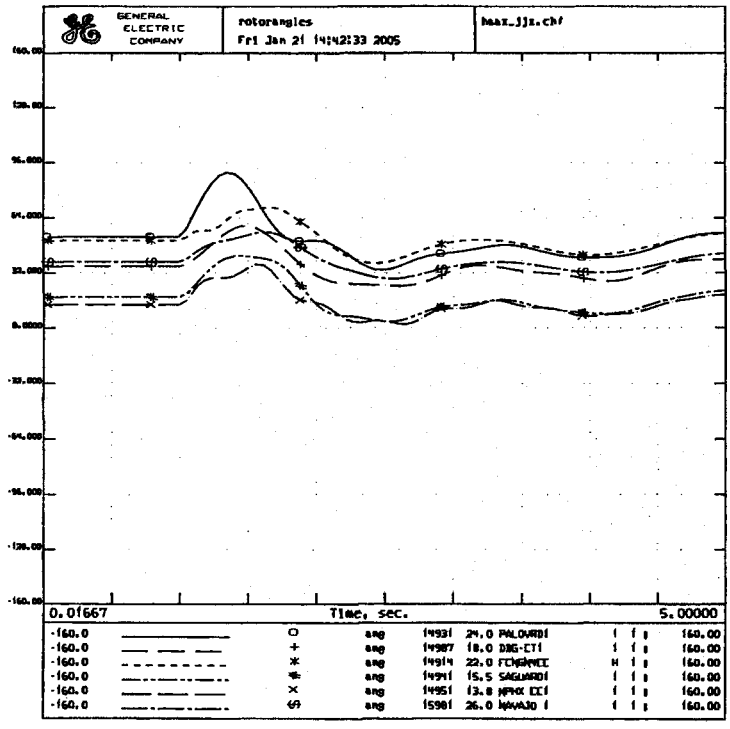
HASSAYAMPA FLT HAAX-JJX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
HAAX-JJX STAB; 01/05; T+0 3P FLT HAAX500;10% FLT BMPING;FLSH CAPS
HV-HK/HK-YV,PLX-DEX/NG;4C CLR FLT H/HAAX-JJX;8C RE1N;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



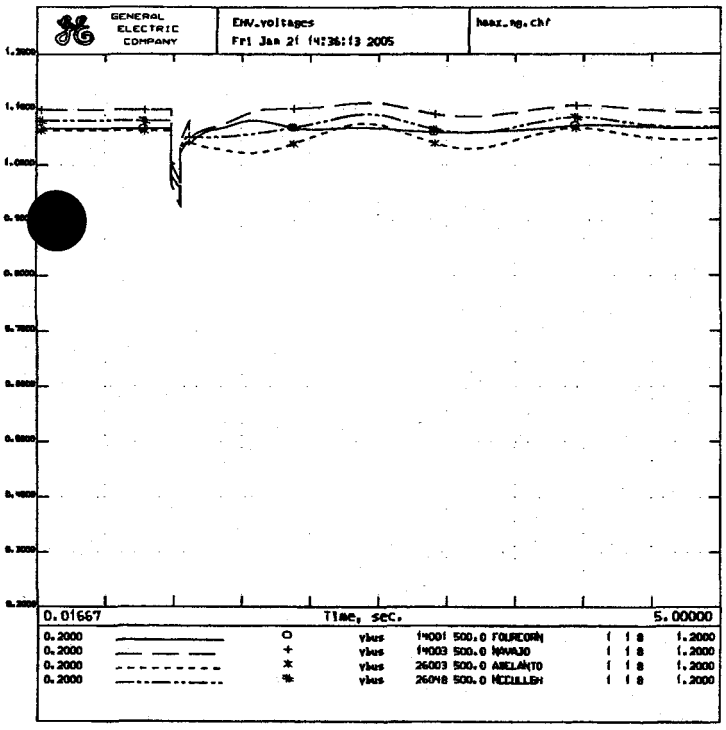
HASSAYAMPA FLT HAAX-JJX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
HAAX-JJX STAB; 01/05; T+0 3P FLT HAAX500;10% FLT BMPING;FLSH CAPS
HV-HK/HK-YV,PLX-DEX/NG;4C CLR FLT H/HAAX-JJX;8C RE1N;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



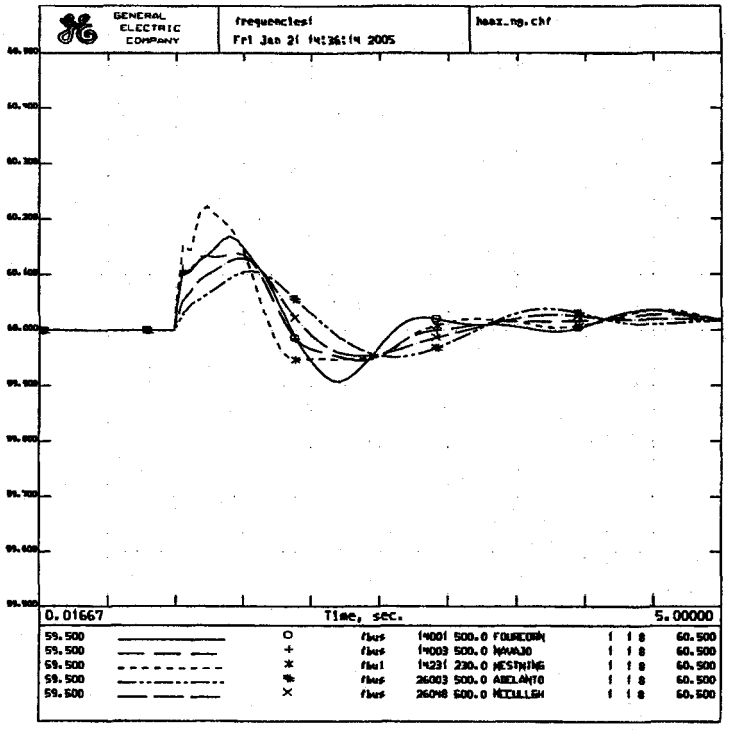
HASSAYAMPA FLT HAAX-JJX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
HAAX-JJX STAB; 01/05; T+0 3P FLT HAAX500;10% FLT BMPING;FLSH CAPS
HV-HK/HK-YV,PLX-DEX/NG;4C CLR FLT H/HAAX-JJX;8C RE1N;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



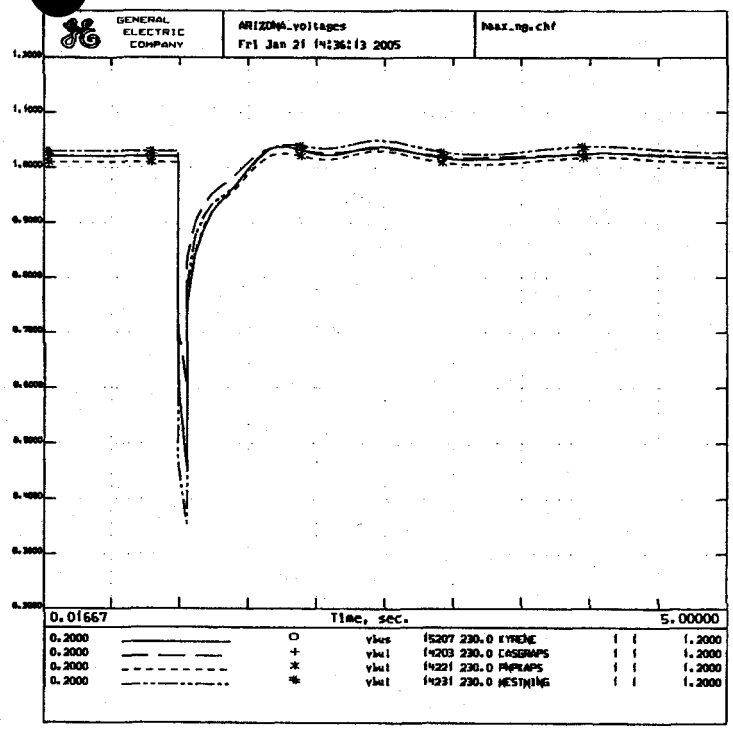
HASSAYAMPA FLT. @/HAAX-NG line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
HAAX-NG STAB; 1/05; T+0 3P FLT HAAX500;10% FLT BMPING;FLSH CAPS
NV-MX/MX-YV,PLX-DEX/NG;4C CLR FLT @/HAAX-NG;8C REIN;2014.dyd;HSCC.bat

2014 Case for 10-Year Plan Stability



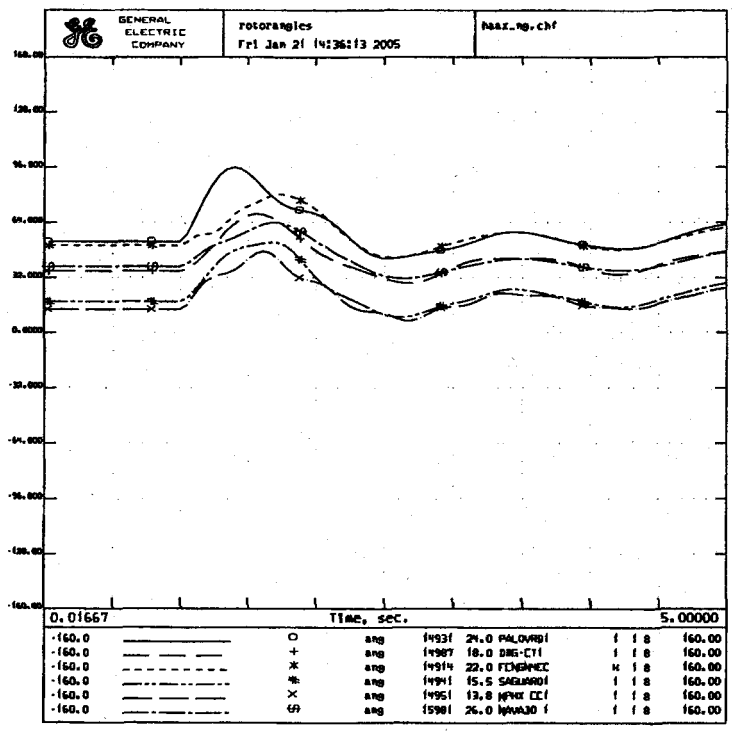
HASSAYAMPA FLT. @/HAAX-NG line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
HAAX-NG STAB; 1/05; T+0 3P FLT HAAX500;10% FLT BMPING;FLSH CAPS
NV-MX/MX-YV,PLX-DEX/NG;4C CLR FLT @/HAAX-NG;8C REIN;2014.dyd;HSCC.bat

2014 Case for 10-Year Plan Stability



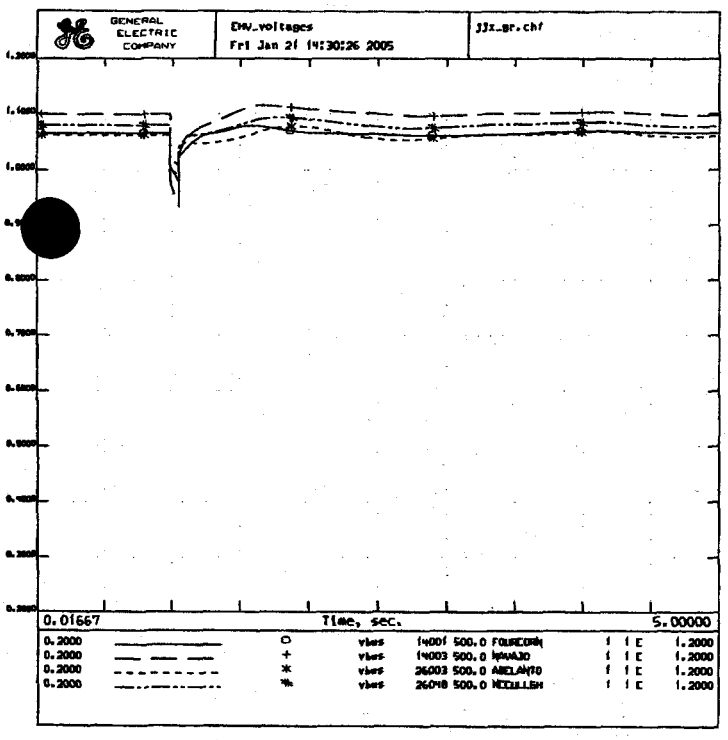
HASSAYAMPA FLT. @/HAAX-NG line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
-NG STAB; 1/05; T+0 3P FLT HAAX500;10% FLT BMPING;FLSH CAPS
/MX-YV,PLX-DEX/NG;4C CLR FLT @/HAAX-NG;8C REIN;2014.dyd;HSCC.bat

Case for 10-Year Plan Stability



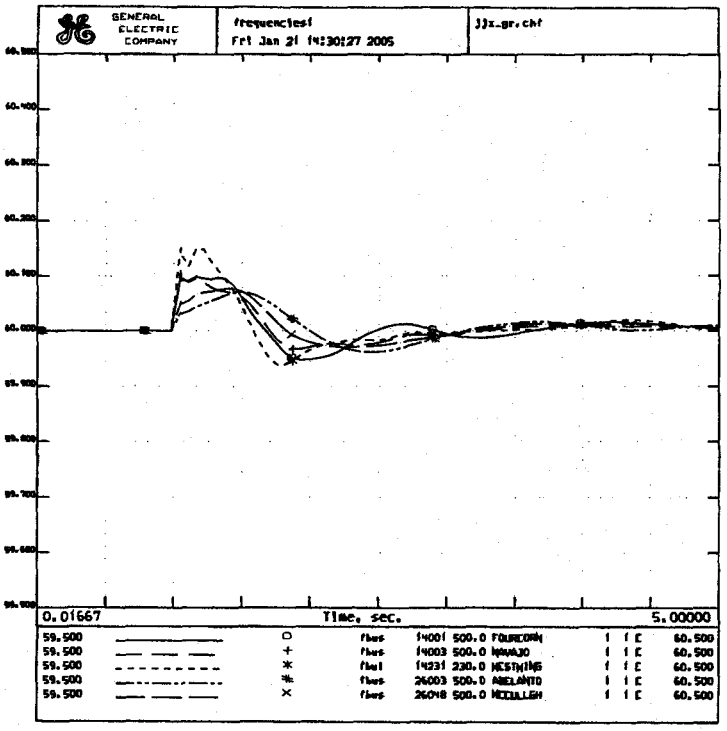
HASSAYAMPA FLT. @/HAAX-NG line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
HAAX-NG STAB; 1/05; T+0 3P FLT HAAX500;10% FLT BMPING;FLSH CAPS
NV-MX/MX-YV,PLX-DEX/NG;4C CLR FLT @/HAAX-NG;8C REIN;2014.dyd;HSCC.bat

2014 Case for 10-Year Plan Stability



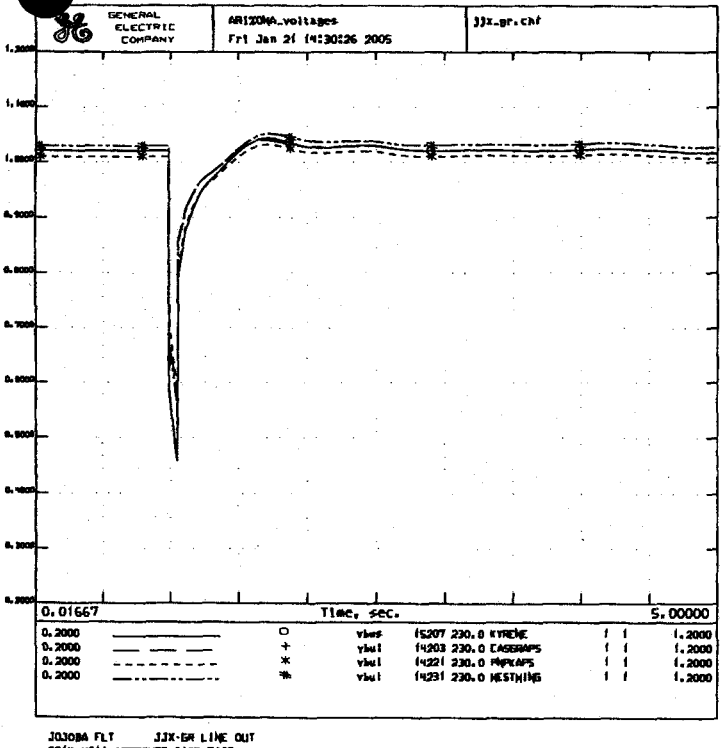
JOJOBA FLT JJX-GR LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
JJX-GR STAB; 01/05; T=0 3P FLT JJX500; 10% FLT IMPING; FLSH CAPS
NV-MK/MK-YV,PLX-DEX/NG;4C CLR FLT N/JJX-GR;8C REIN;2014.dyd;NSCC.bpt

2014 Case for 10-Year Plan Stability



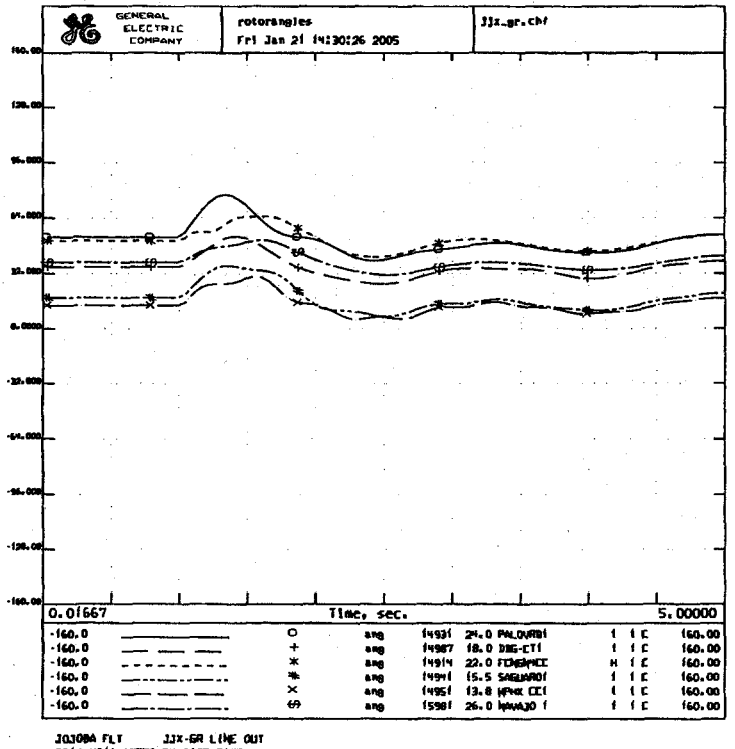
JOJOBA FLT JJX-GR LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
JJX-GR STAB; 01/05; T=0 3P FLT JJX500; 10% FLT IMPING; FLSH CAPS
NV-MK/MK-YV,PLX-DEX/NG;4C CLR FLT N/JJX-GR;8C REIN;2014.dyd;NSCC.bpt

2014 Case for 10-Year Plan Stability



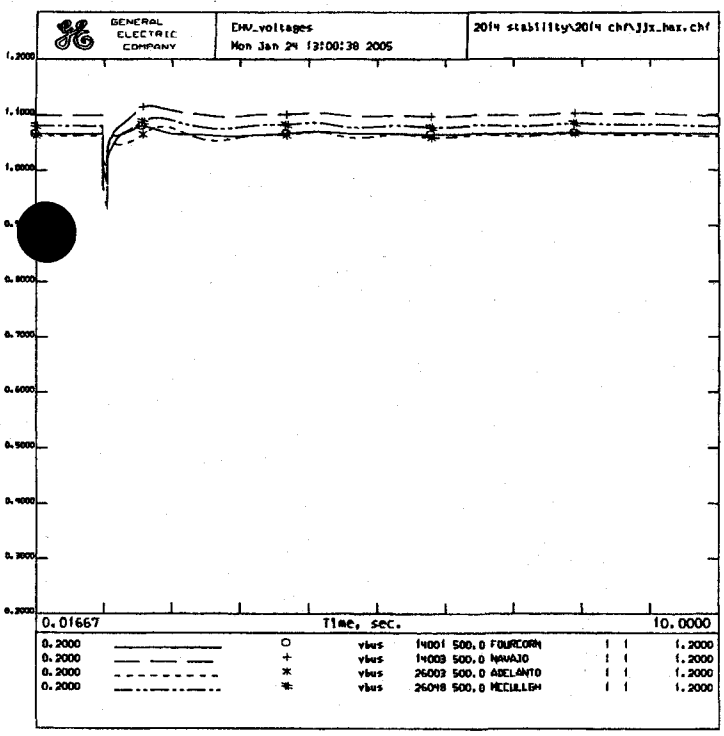
JOJOBA FLT JJX-GR LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
[redacted]-GR STAB; 01/05; T=0 3P FLT JJX500; 10% FLT IMPING; FLSH CAPS
[redacted]/MK-YV,PLX-DEX/NG;4C CLR FLT N/JJX-GR;8C REIN;2014.dyd;NSCC.bpt

[redacted] Case for 10-Year Plan Stability



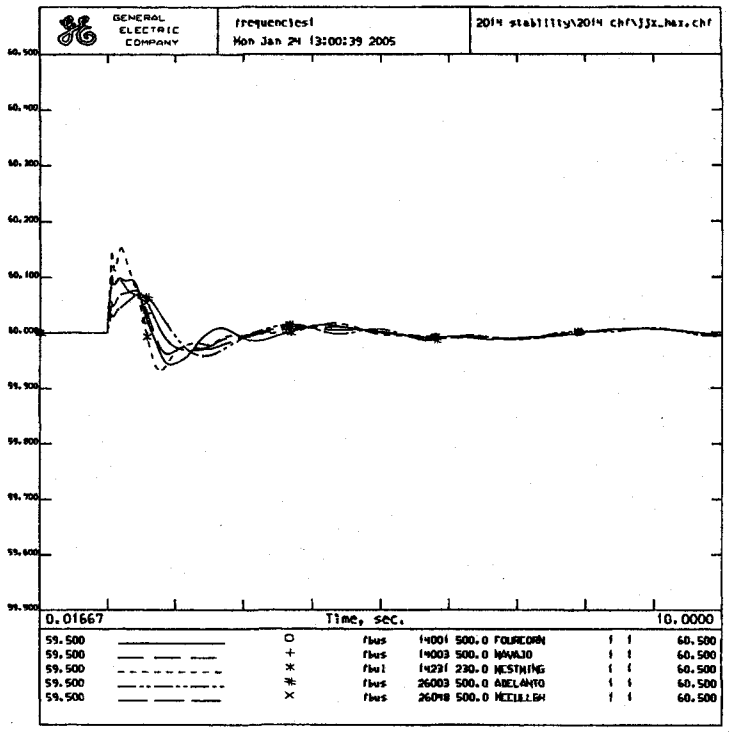
JOJOBA FLT JJX-GR LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
JJX-GR STAB; 01/05; T=0 3P FLT JJX500; 10% FLT IMPING; FLSH CAPS
NV-MK/MK-YV,PLX-DEX/NG;4C CLR FLT N/JJX-GR;8C REIN;2014.dyd;NSCC.bpt

2014 Case for 10-Year Plan Stability



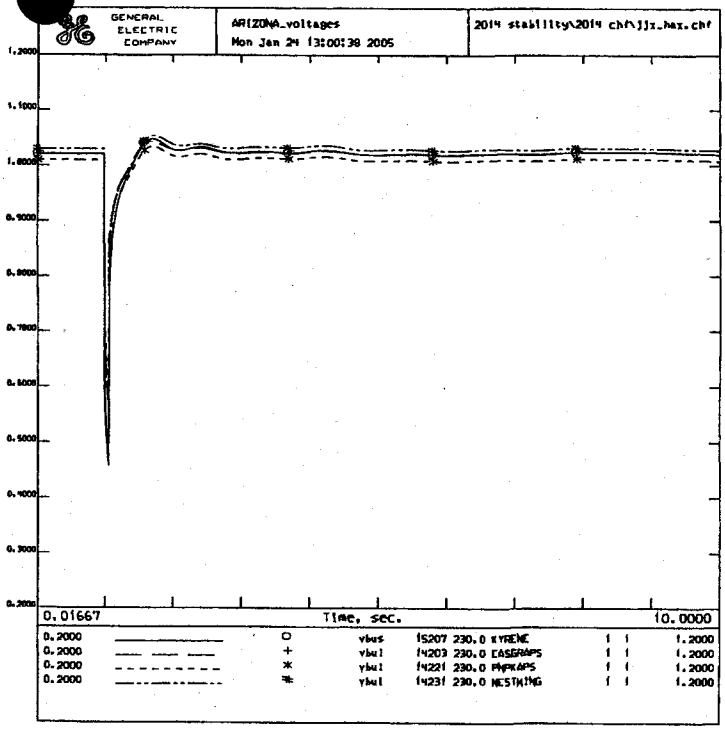
WESTERN ELECTRICITY COORDINATING COUNCIL
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004

2014 Case for 10-Year Plan Stability



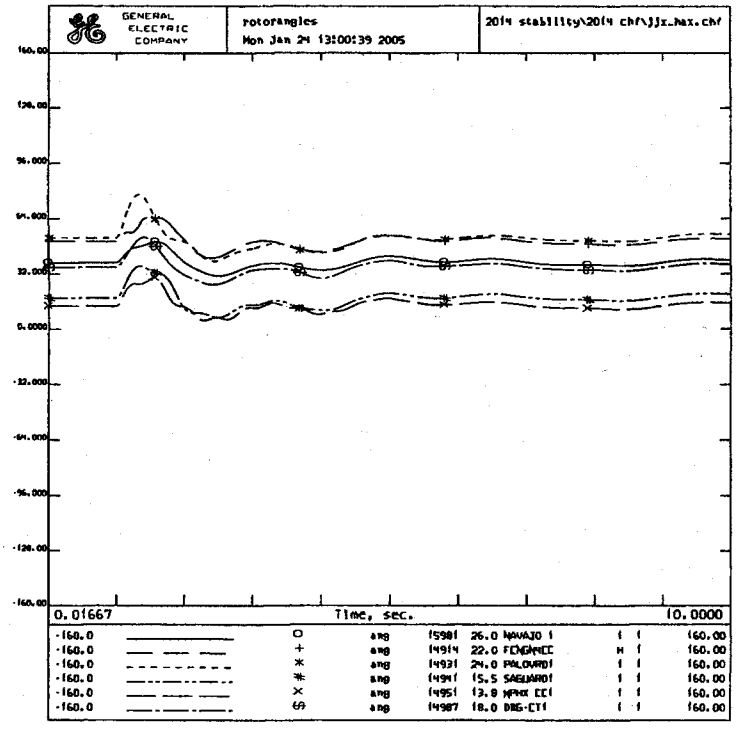
WESTERN ELECTRICITY COORDINATING COUNCIL
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004

2014 Case for 10-Year Plan Stability



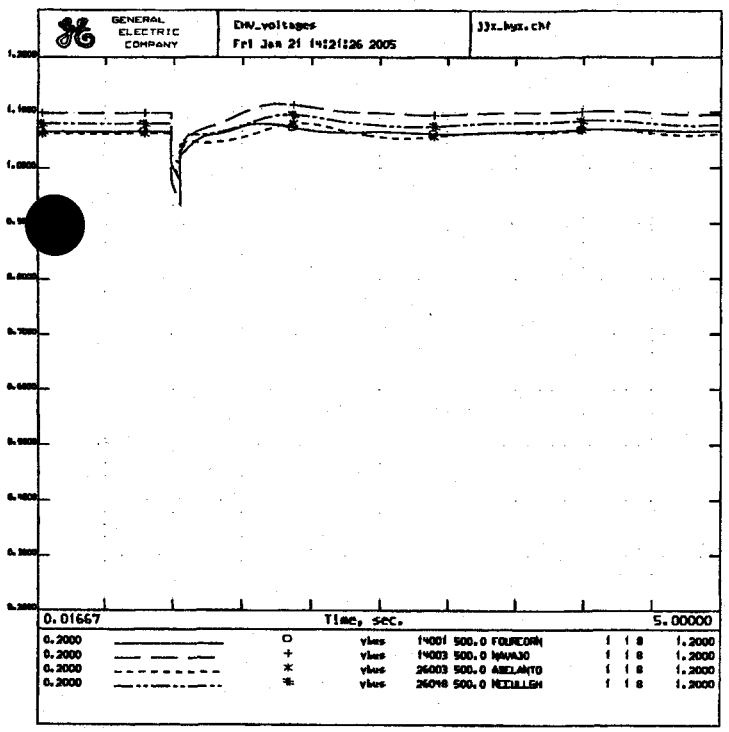
WESTERN ELECTRICITY COORDINATING COUNCIL
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004

Case for 10-Year Plan Stability



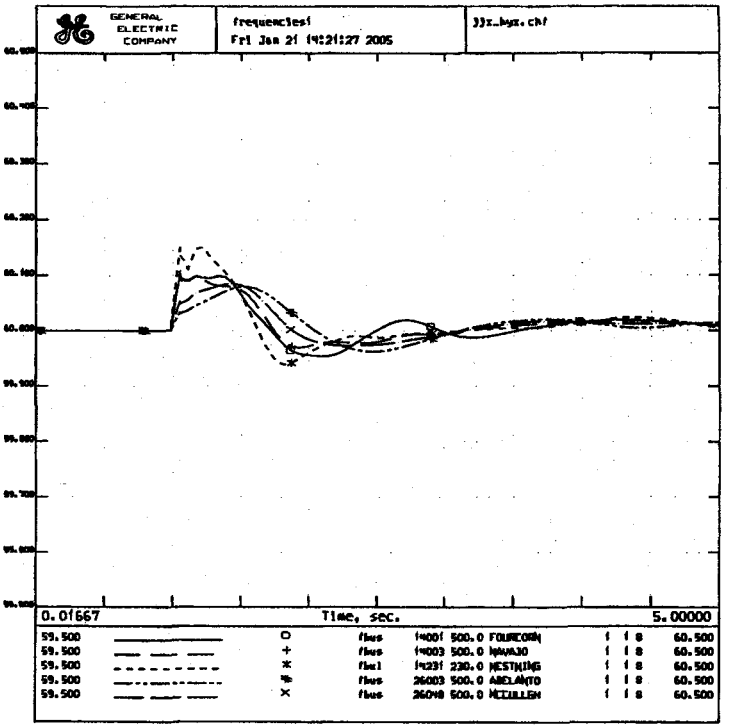
WESTERN ELECTRICITY COORDINATING COUNCIL
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004

2014 Case for 10-Year Plan Stability



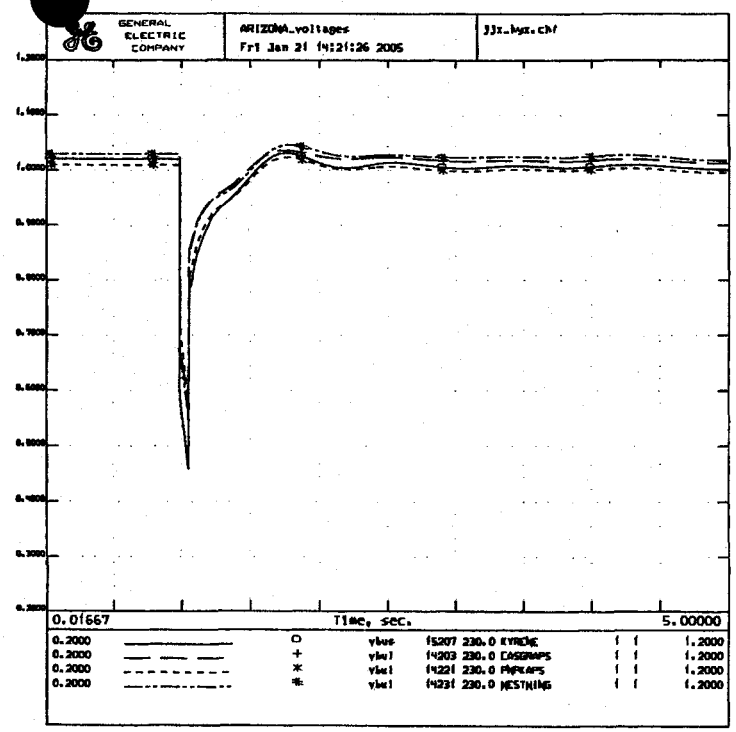
JOJOBA FLT JJX-KYX LINE OUT
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
JJX-KYX STAB; 01/05; T=0 3P FLT JJX500;10% FLT DMPING;FLSH CAPS
WW-MC/MC-YV,PLX-DEX/MG;MC CLR FLT W/JJX-KYX;BC REIN;2014.dyd;WSCC.bpt

2014 Case for 10-Year Plan Stability



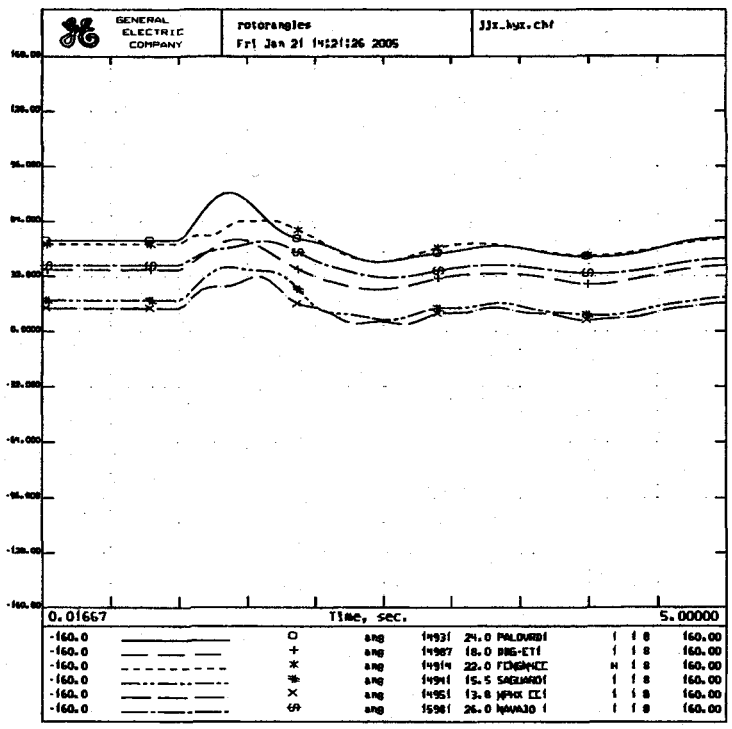
JOJOBA FLT JJX-KYX LINE OUT
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
JJX-KYX STAB; 01/05; T=0 3P FLT JJX500;10% FLT DMPING;FLSH CAPS
WW-MC/MC-YV,PLX-DEX/MG;MC CLR FLT W/JJX-KYX;BC REIN;2014.dyd;WSCC.bpt

2014 Case for 10-Year Plan Stability



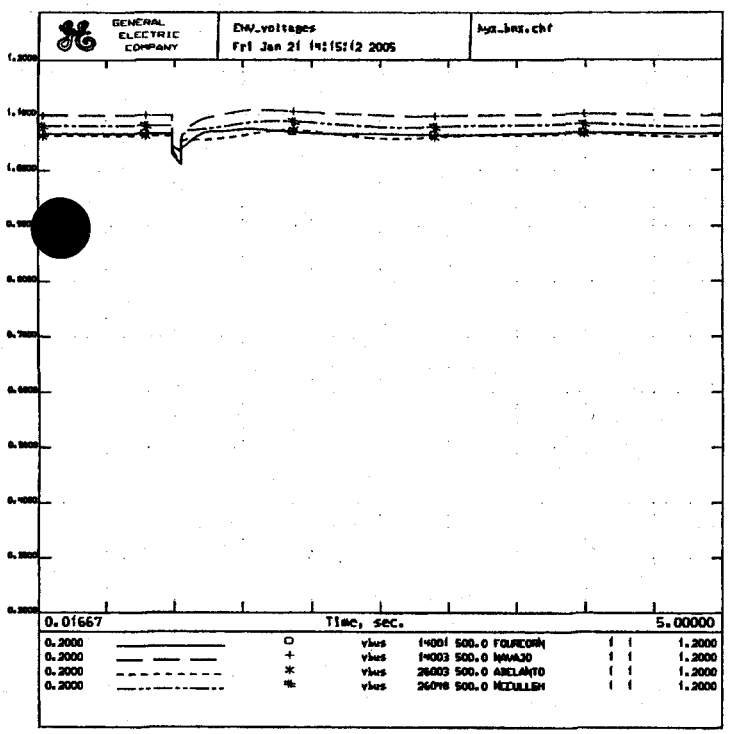
JOJOBA FLT JJX-KYX LINE OUT
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
[illegible]KYX STAB; 01/05; T=0 3P FLT JJX500;10% FLT DMPING;FLSH CAPS
[illegible]/MC-YV,PLX-DEX/MG;MC CLR FLT W/JJX-KYX;BC REIN;2014.dyd;WSCC.bpt

[illegible]Case for 10-Year Plan Stability



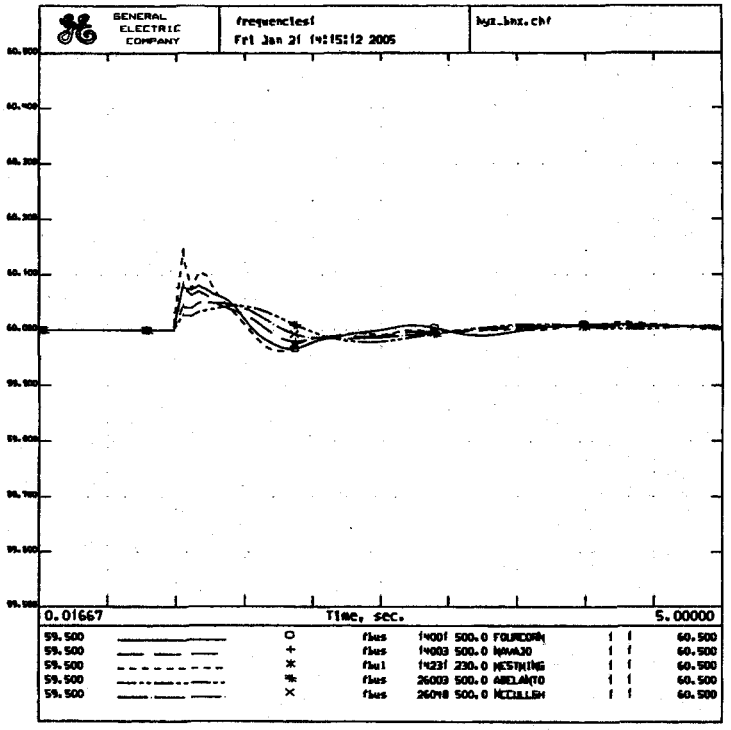
JOJOBA FLT JJX-KYX LINE OUT
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
JJX-KYX STAB; 01/05; T=0 3P FLT JJX500;10% FLT DMPING;FLSH CAPS
WW-MC/MC-YV,PLX-DEX/MG;MC CLR FLT W/JJX-KYX;BC REIN;2014.dyd;WSCC.bpt

2014 Case for 10-Year Plan Stability



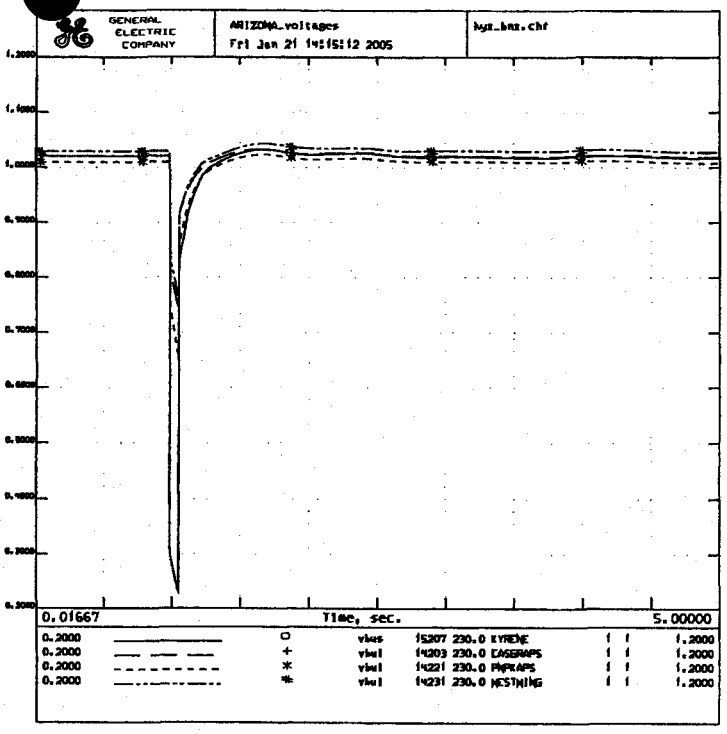
KYRENE FLT KYX-BNX LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
KYX-BNX STAB o1; 01/05; T=0 3P FLT KYX500;
4C CLR FLT M/KYX-BNX;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability

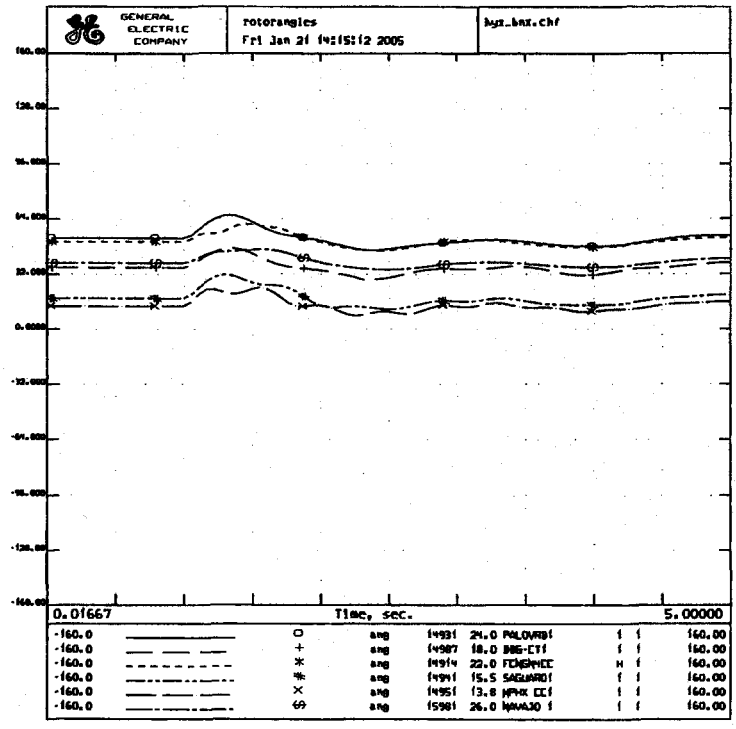


KYRENE FLT KYX-BNX LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
KYX-BNX STAB o1; 01/05; T=0 3P FLT KYX500;
4C CLR FLT M/KYX-BNX;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability

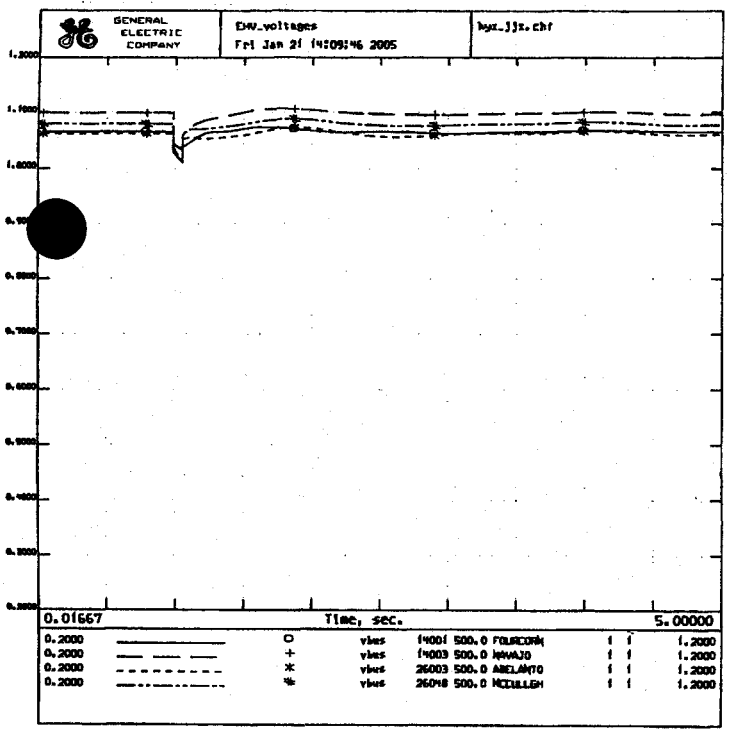


KYRENE FLT KYX-BNX LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
BNX STAB o1; 01/05; T=0 3P FLT KYX500;
FLT M/KYX-BNX;2014.dyd;HSCC.bpt
Case for 10-Year Plan Stability



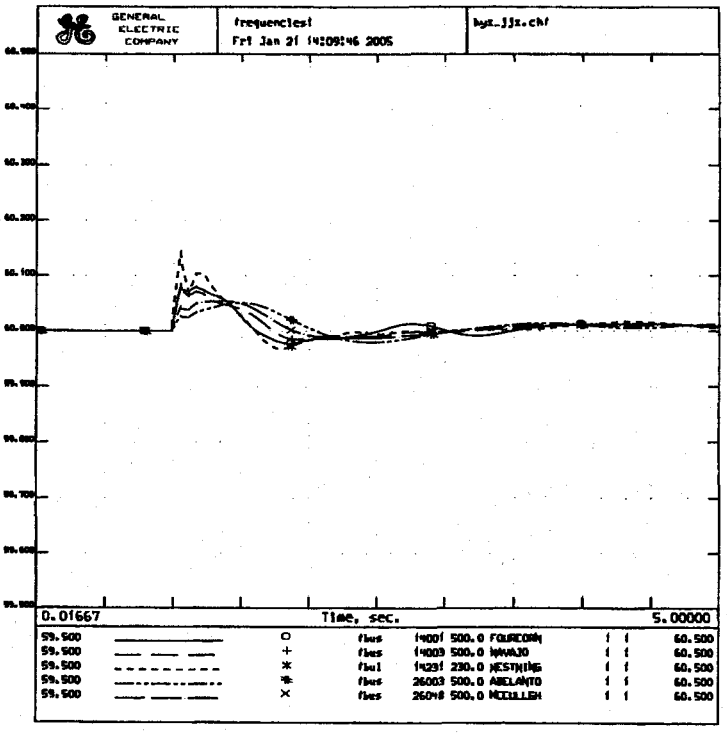
KYRENE FLT KYX-BNX LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
KYX-BNX STAB o1; 01/05; T=0 3P FLT KYX500;
4C CLR FLT M/KYX-BNX;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



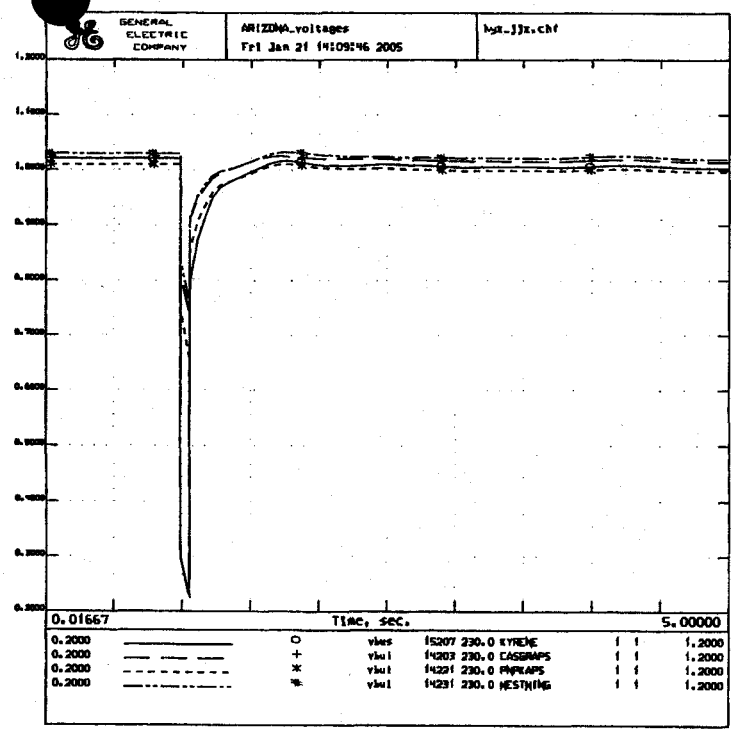
KYRENE FLT KYX-JJX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
KYX-JJX STAB .if 01/04; T+0 3P FLT KYX500;
%C CLR FLT M/KYX-JJX;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



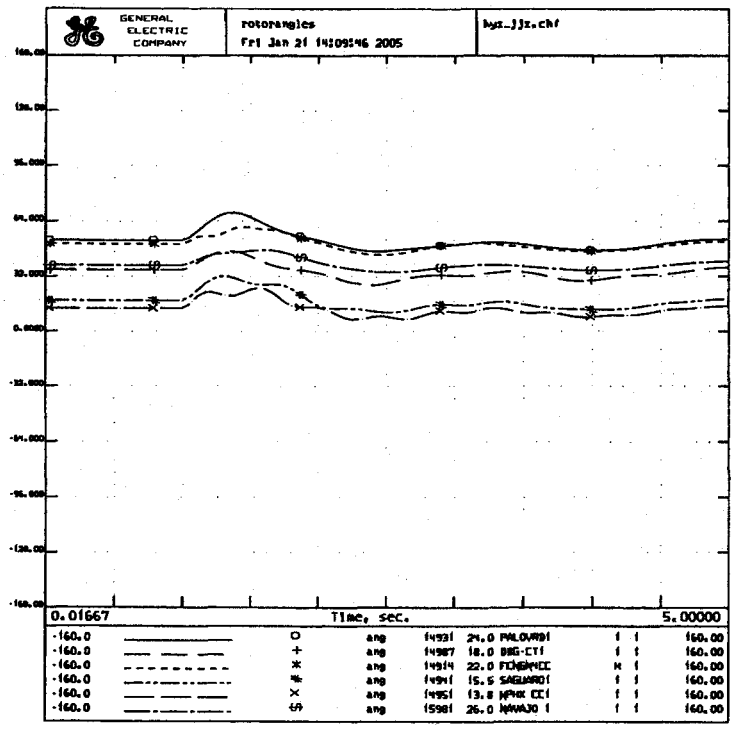
KYRENE FLT KYX-JJX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
KYX-JJX STAB .if 01/04; T+0 3P FLT KYX500;
%C CLR FLT M/KYX-JJX;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



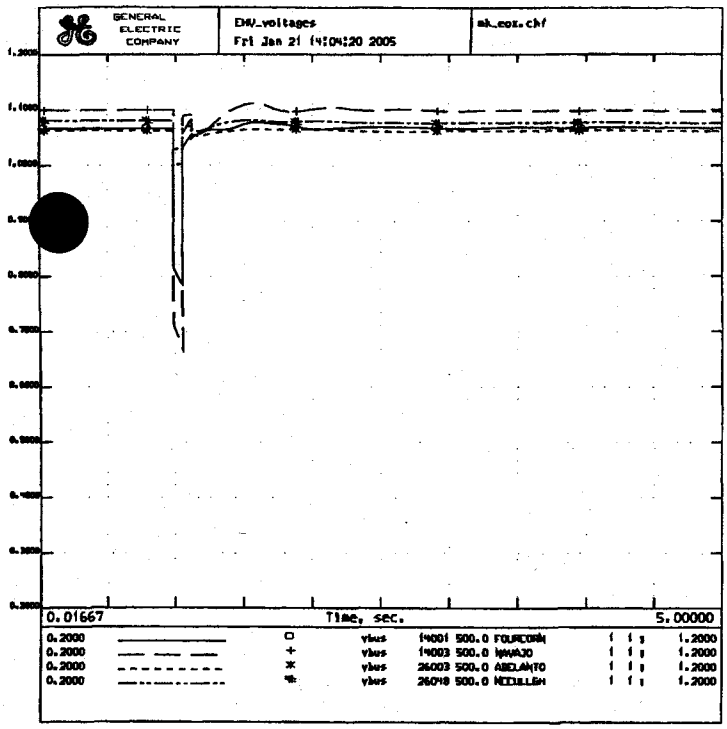
KYRENE FLT KYX-JJX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
KYX-JJX STAB .if 01/04; T+0 3P FLT KYX500;
%C CLR FLT M/KYX-JJX;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



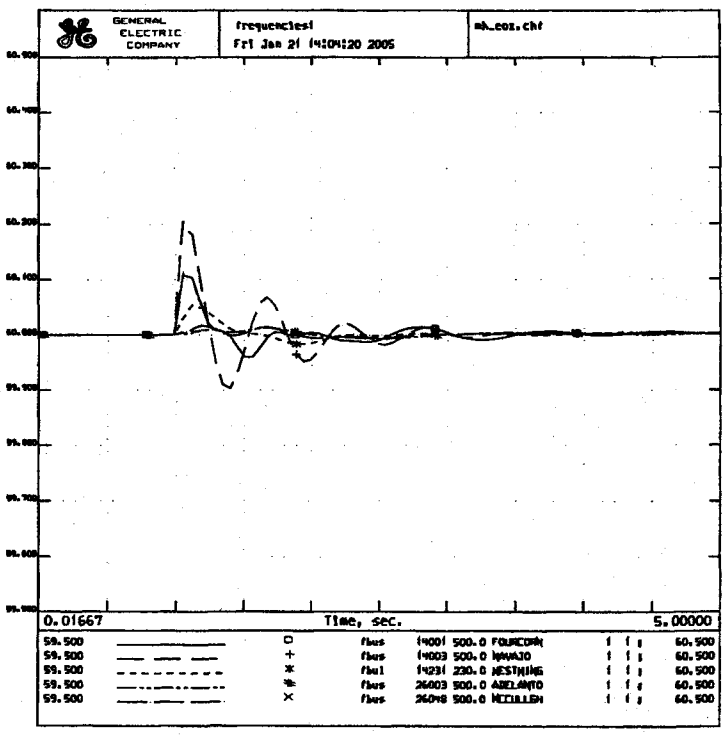
KYRENE FLT KYX-JJX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
KYX-JJX STAB .if 01/04; T+0 3P FLT KYX500;
%C CLR FLT M/KYX-JJX;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



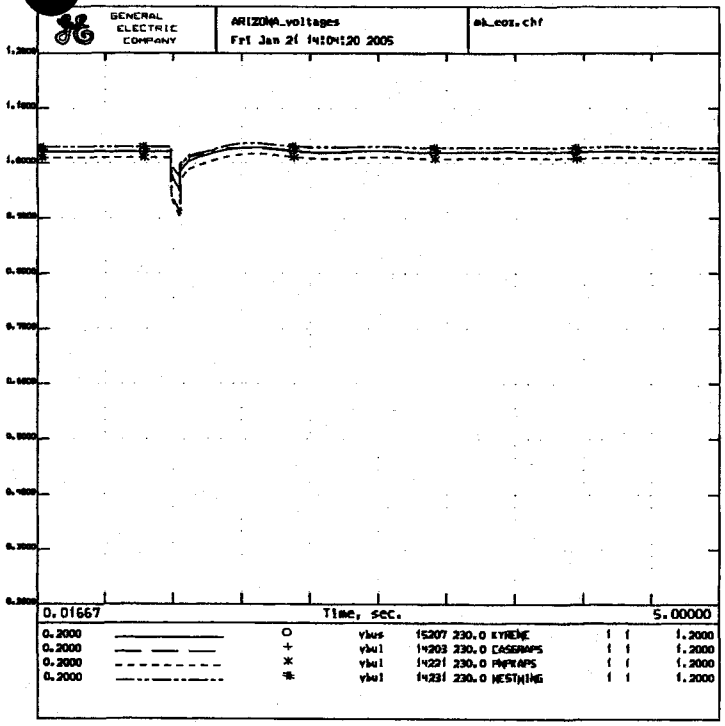
MDEN:KOP1 FLT. MK-EOX line out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
MK-EOX STAB; 1/05; T+0 3P FLT MK500;FLSH CAPS MK-YV/YV-MM,
MV-MCX/MK,MK-EOX;4C CLR FLT M/MK-EOX;8C REIN;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



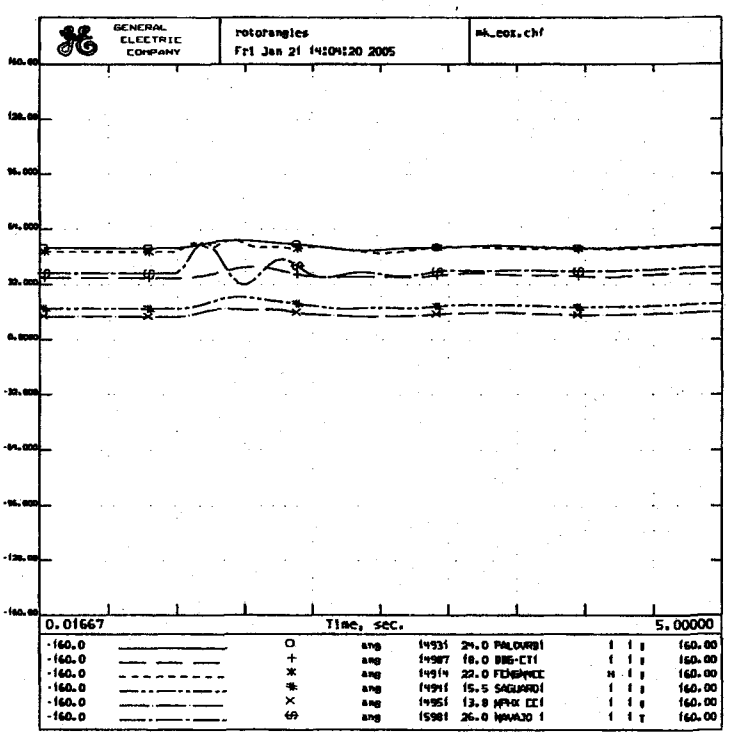
MDEN:KOP1 FLT. MK-EOX line out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
MK-EOX STAB; 1/05; T+0 3P FLT MK500;FLSH CAPS MK-YV/YV-MM,
MV-MCX/MK,MK-EOX;4C CLR FLT M/MK-EOX;8C REIN;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



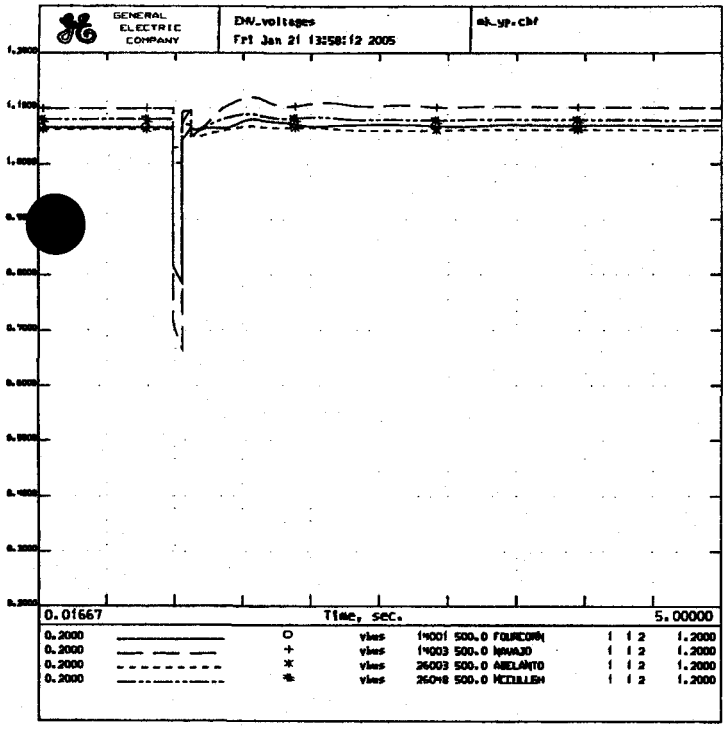
MDEN:KOP1 FLT. MK-EOX line out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
[illegible]OX STAB; 1/05; T+0 3P FLT MK500;FLSH CAPS MK-YV/YV-MM,
[illegible]X/MK,MK-EOX;4C CLR FLT M/MK-EOX;8C REIN;2014.dyd;MSCC.bat

[illegible] Case for 10-Year Plan Stability



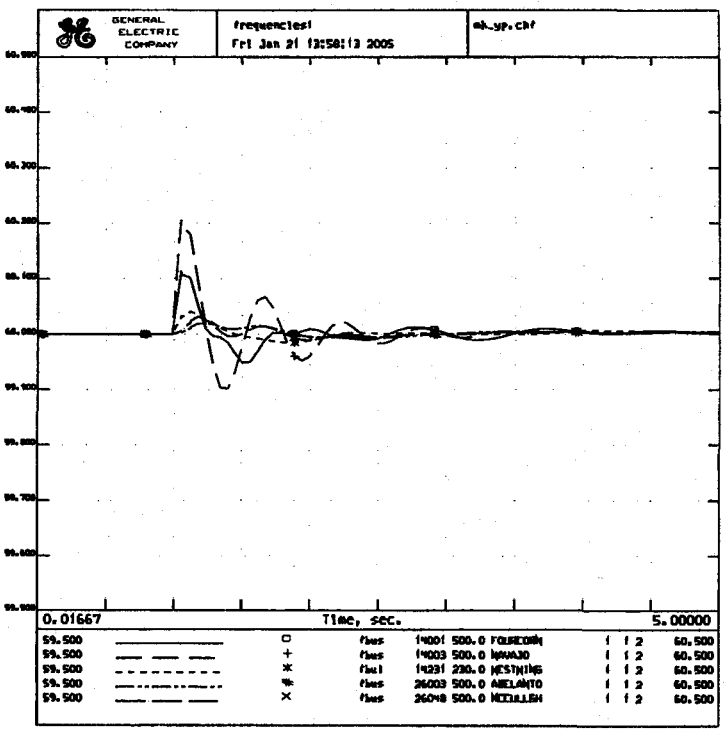
MDEN:KOP1 FLT. MK-EOX line out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
MK-EOX STAB; 1/05; T+0 3P FLT MK500;FLSH CAPS MK-YV/YV-MM,
MV-MCX/MK,MK-EOX;4C CLR FLT M/MK-EOX;8C REIN;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



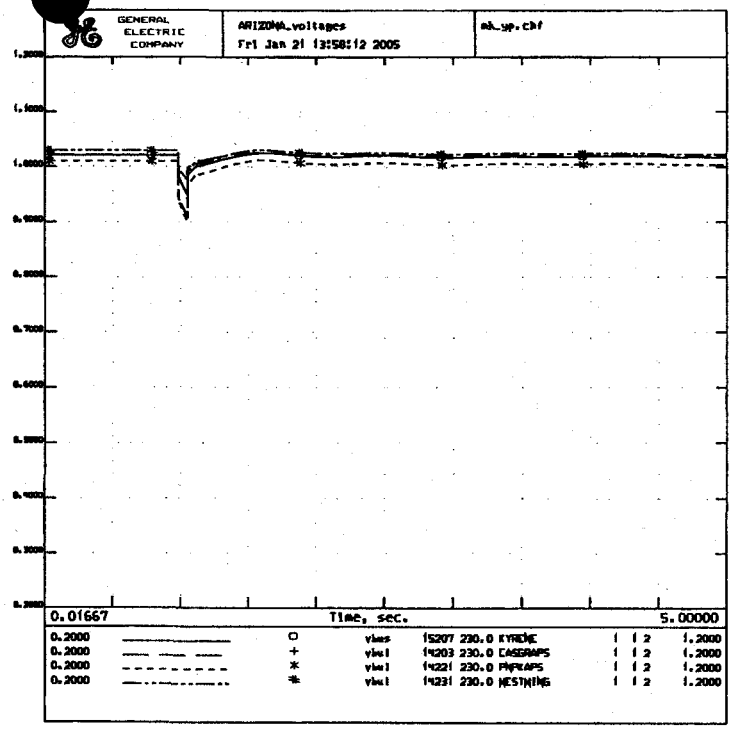
MDE]KOP] FLT Mk-YV line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
Mk-YV STAB; 1/05; T+0 3P FLT Mk500;FLSH CAPS Mk-YV/YV-MM,
MV-MCX/Mk,Mk-EOX;4C CLR FLT M/Mk-YV;8C RE1%;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



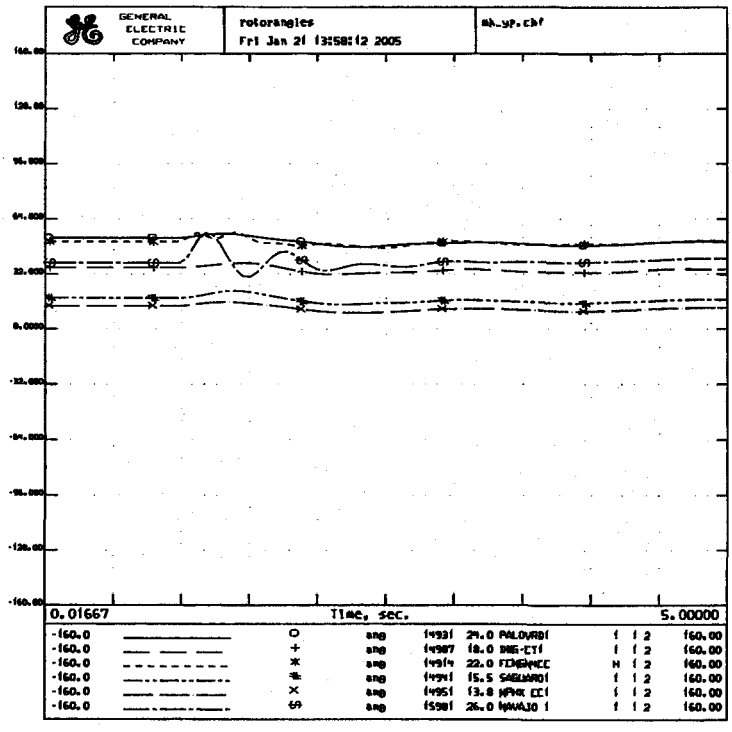
MDE]KOP] FLT Mk-YV line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
Mk-YV STAB; 1/05; T+0 3P FLT Mk500;FLSH CAPS Mk-YV/YV-MM,
MV-MCX/Mk,Mk-EOX;4C CLR FLT M/Mk-YV;8C RE1%;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



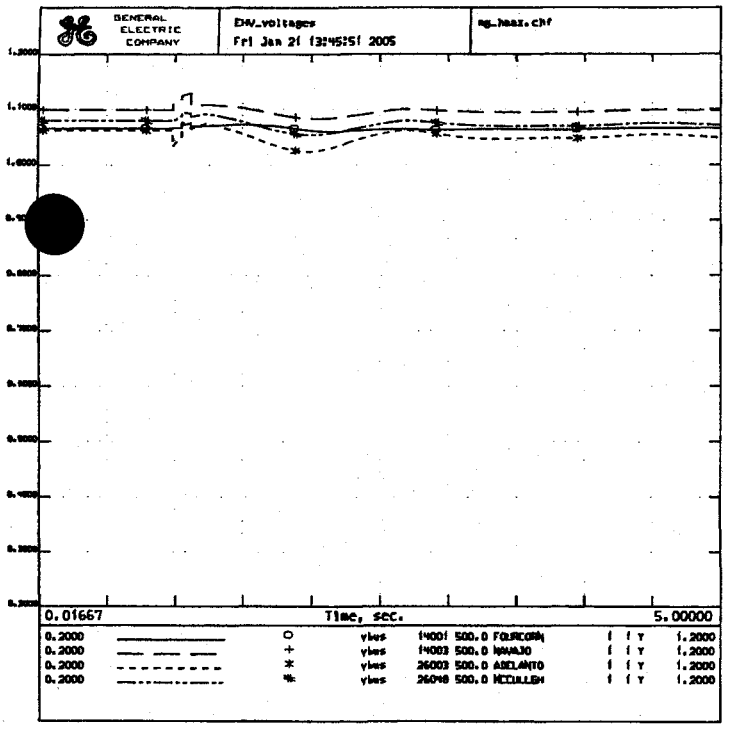
MDE]KOP] FLT Mk-YV line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
MV STAB; 1/05; T+0 3P FLT Mk500;FLSH CAPS Mk-YV/YV-MM,
X/Mk,Mk-EOX;4C CLR FLT M/Mk-YV;8C RE1%;2014.dyd;MSCC.bat

Case for 10-Year Plan Stability



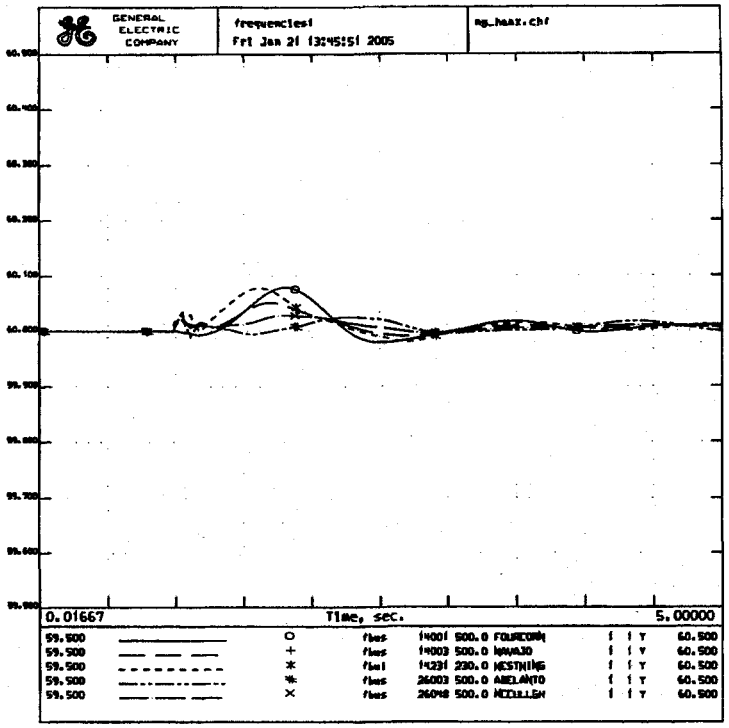
MDE]KOP] FLT Mk-YV line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
Mk-YV STAB; 1/05; T+0 3P FLT Mk500;FLSH CAPS Mk-YV/YV-MM,
MV-MCX/Mk,Mk-EOX;4C CLR FLT M/Mk-YV;8C RE1%;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



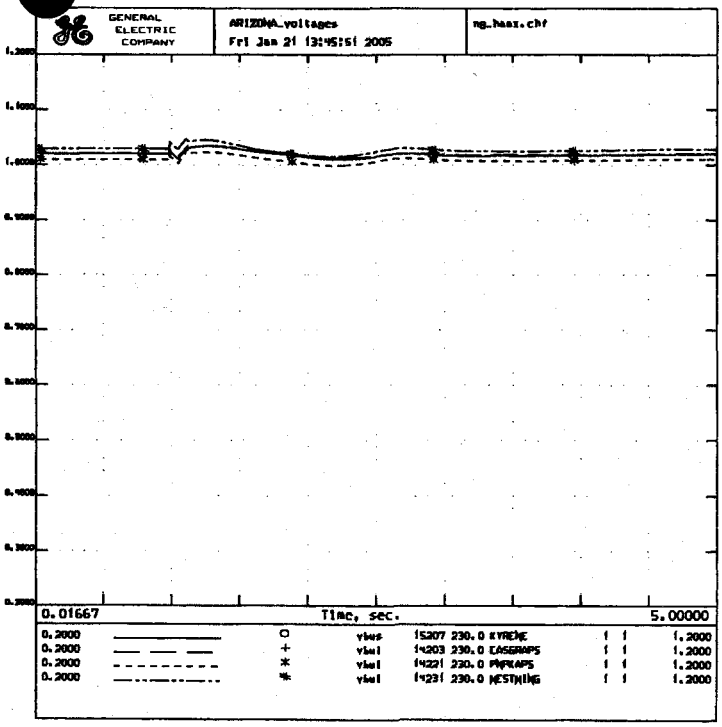
N.GILA FLT NG-HAAX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NG STAB,3 PH FLT NG500KV
FLASH CAPS,N/4 CYC CLR FLT;NG-HAAX OUT;4/8 CYC REIN CAPS

2014 Case for 10-Year Plan Stability



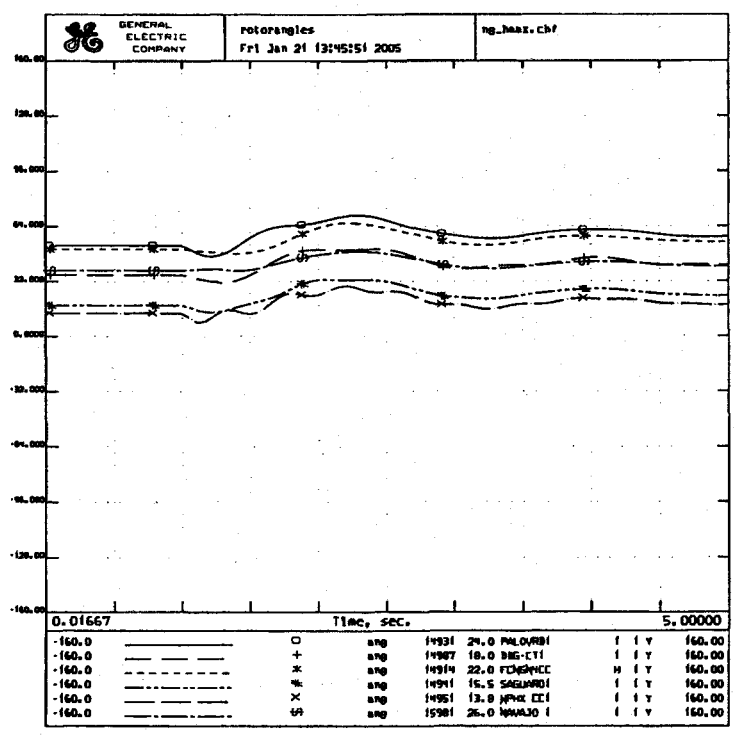
N.GILA FLT NG-HAAX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NG STAB,3 PH FLT NG500KV
FLASH CAPS,N/4 CYC CLR FLT;NG-HAAX OUT;4/8 CYC REIN CAPS

2014 Case for 10-Year Plan Stability



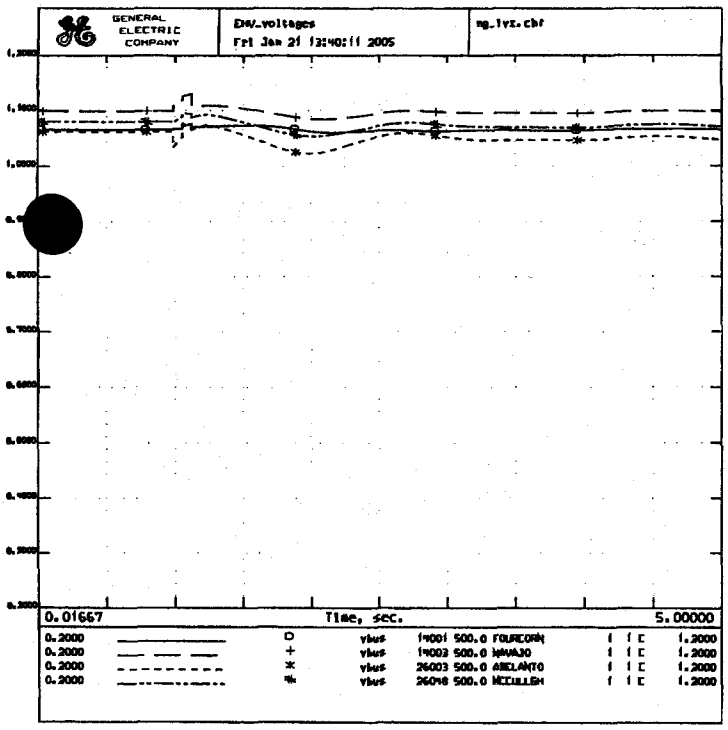
N.GILA FLT NG-HAAX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NG STAB,3 PH FLT NG500KV
FLASH CAPS,N/4 CYC CLR FLT;NG-HAAX OUT;4/8 CYC REIN CAPS

2014 Case for 10-Year Plan Stability



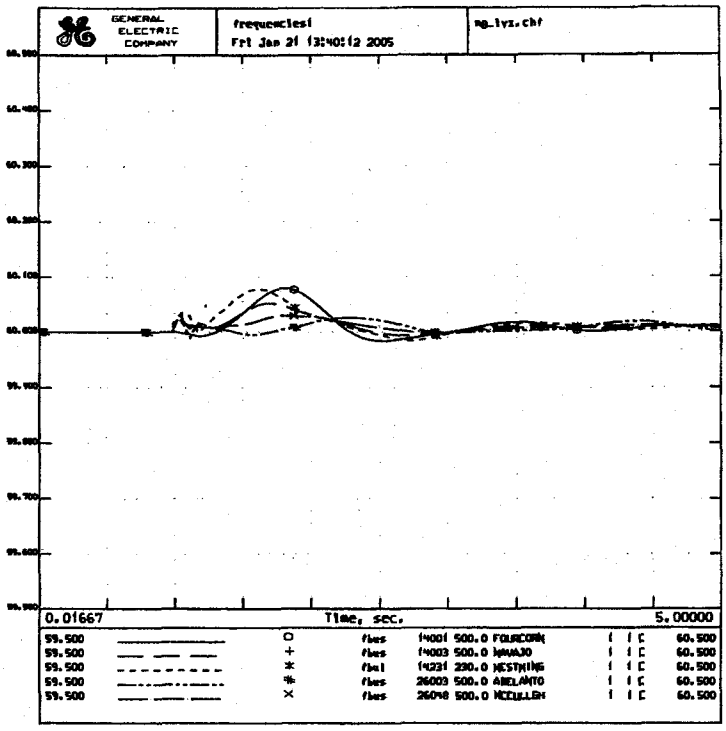
N.GILA FLT NG-HAAX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NG STAB,3 PH FLT NG500KV
FLASH CAPS,N/4 CYC CLR FLT;NG-HAAX OUT;4/8 CYC REIN CAPS

2014 Case for 10-Year Plan Stability



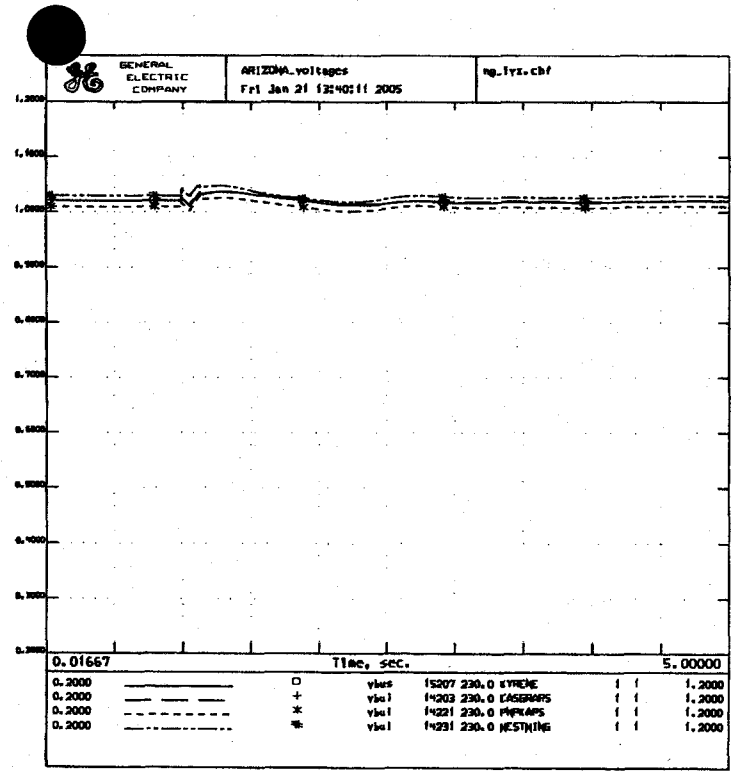
N.GILA FLT NG-IVX, V LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NG STAB,3 PH FLT NG500KV
FLASH CAPS,H/4 CYC CLR FLT;NG-IVX OUT;4/8 CYC REIN CAPS

2014 Case for 10-Year Plan Stability



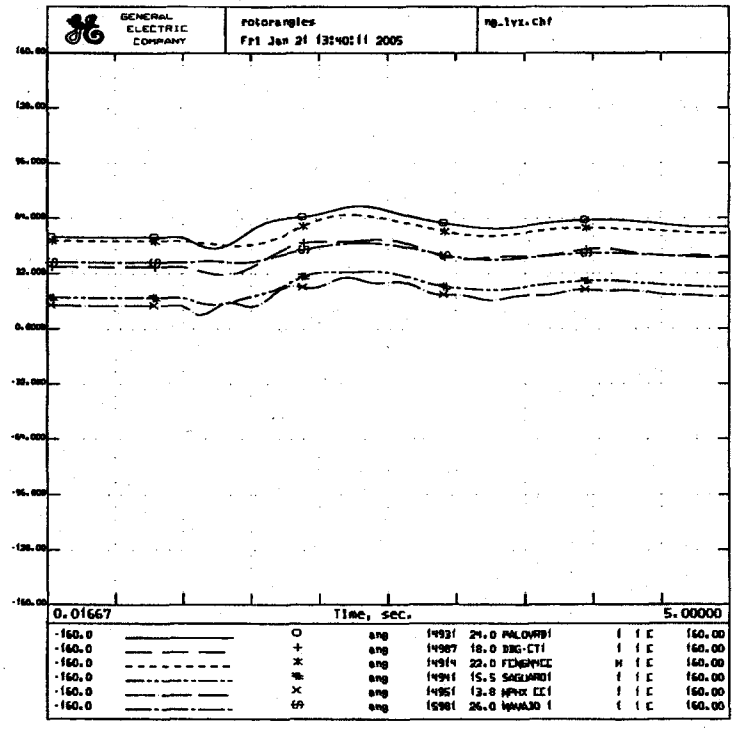
N.GILA FLT NG-IVX, V LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NG STAB,3 PH FLT NG500KV
FLASH CAPS,H/4 CYC CLR FLT;NG-IVX OUT;4/8 CYC REIN CAPS

2014 Case for 10-Year Plan Stability



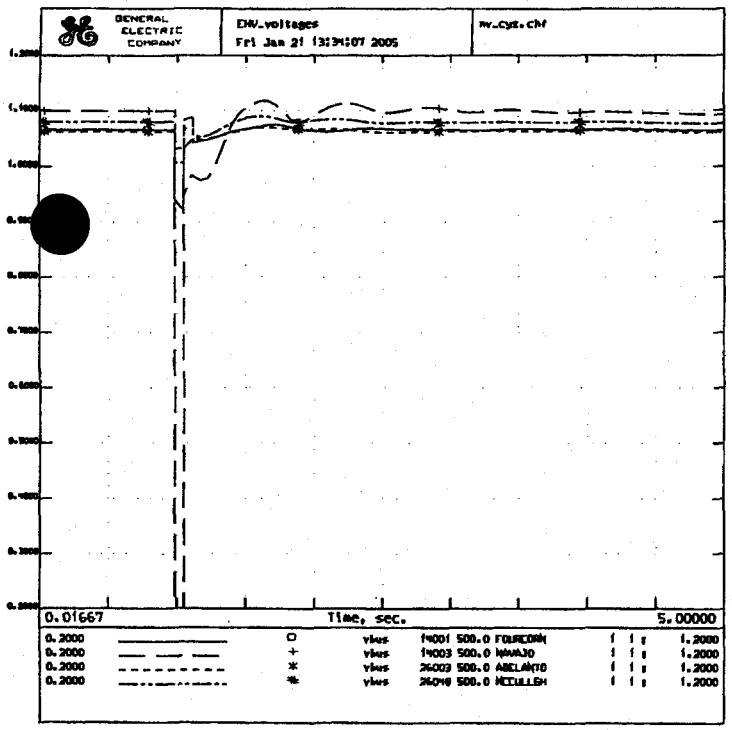
N.GILA FLT NG-IVX, V LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
STAB,3 PH FLT NG500KV
CAPS,H/4 CYC CLR FLT;NG-IVX OUT;4/8 CYC REIN CAPS

Case for 10-Year Plan Stability



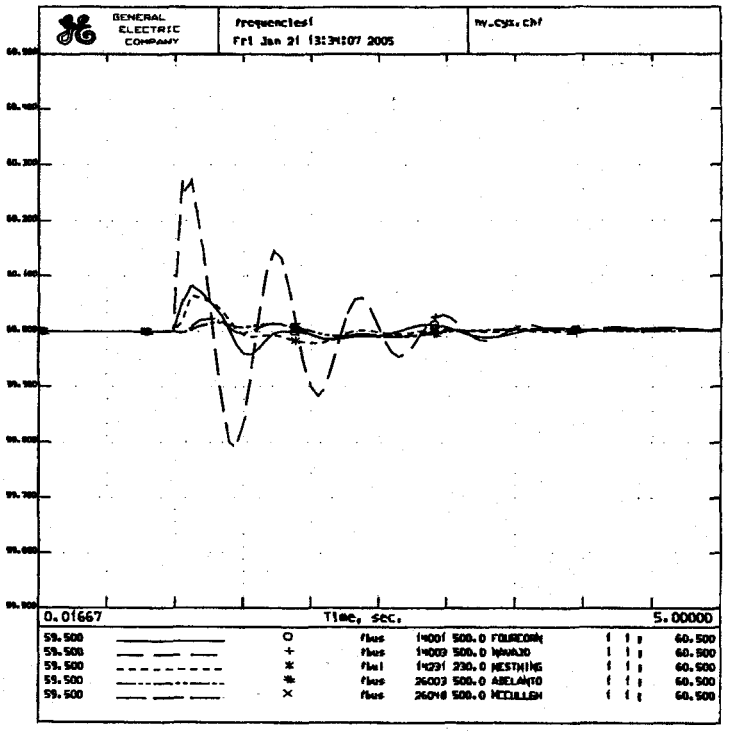
N.GILA FLT NG-IVX, V LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NG STAB,3 PH FLT NG500KV
FLASH CAPS,H/4 CYC CLR FLT;NG-IVX OUT;4/8 CYC REIN CAPS

2014 Case for 10-Year Plan Stability



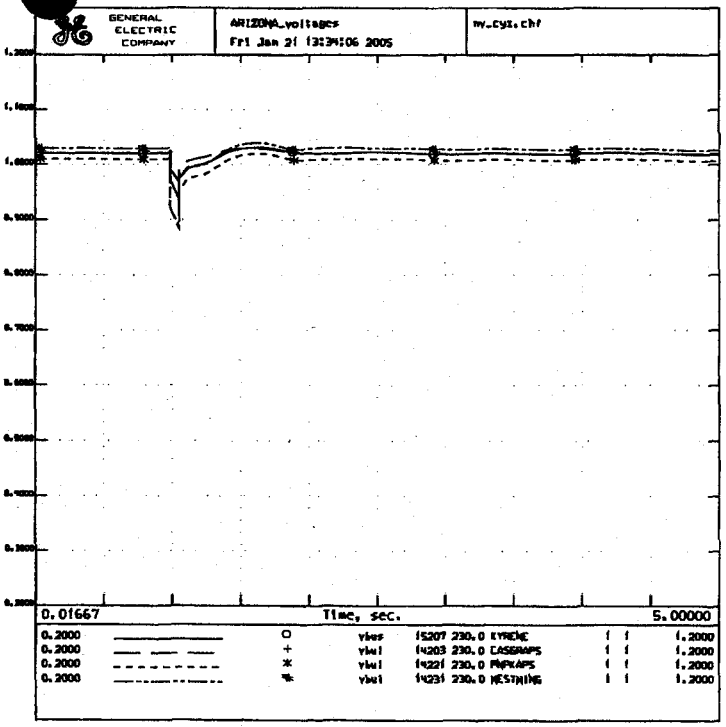
NAVAJO FLT, NV-CYX line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-CYX STAB; 1/03; T+0 3P FLT NV500; 6% FLT IMPING; FLSH CAPS
NV-MCX/MC,MC-EOX;MC CLR FLT N/NV-CYX;BC RE1N;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



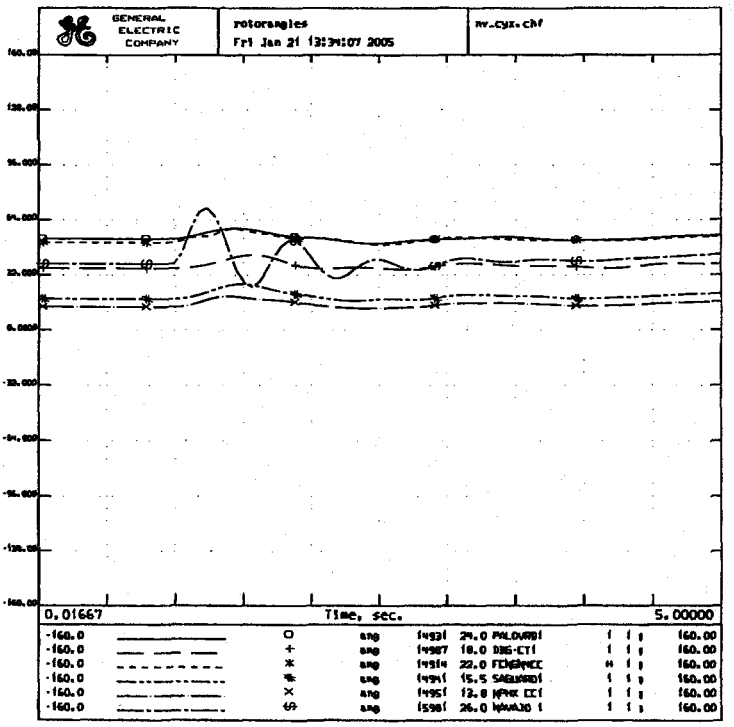
NAVAJO FLT, NV-CYX line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-CYX STAB; 1/03; T+0 3P FLT NV500; 6% FLT IMPING; FLSH CAPS
NV-MCX/MC,MC-EOX;MC CLR FLT N/NV-CYX;BC RE1N;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



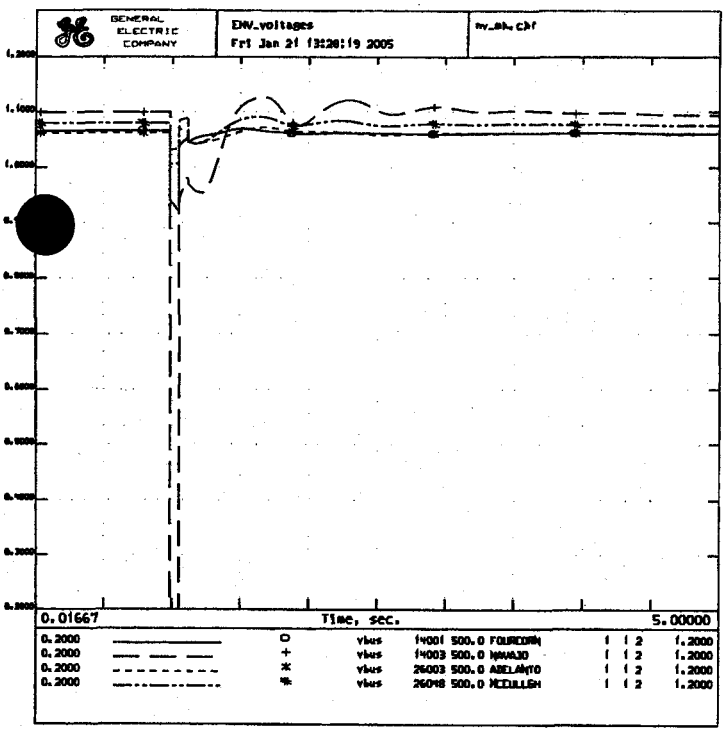
NAVAJO FLT, NV-CYX line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
YX STAB; 1/03; T+0 3P FLT NV500; 6% FLT IMPING; FLSH CAPS
X/MC,MC-EOX;MC CLR FLT N/NV-CYX;BC RE1N;2014.dyd;NSCC.bat

Case for 10-Year Plan Stability



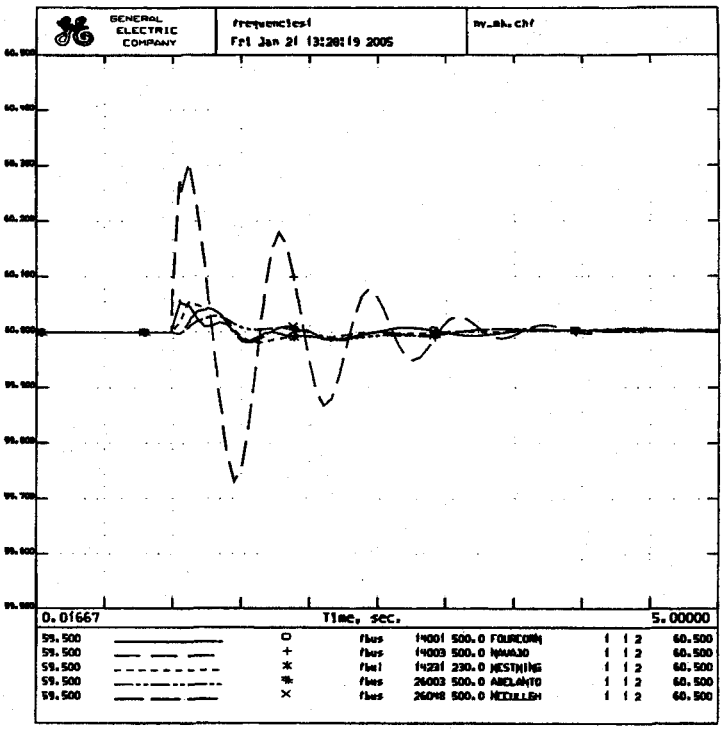
NAVAJO FLT, NV-CYX line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-CYX STAB; 1/03; T+0 3P FLT NV500; 6% FLT IMPING; FLSH CAPS
NV-MCX/MC,MC-EOX;MC CLR FLT N/NV-CYX;BC RE1N;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



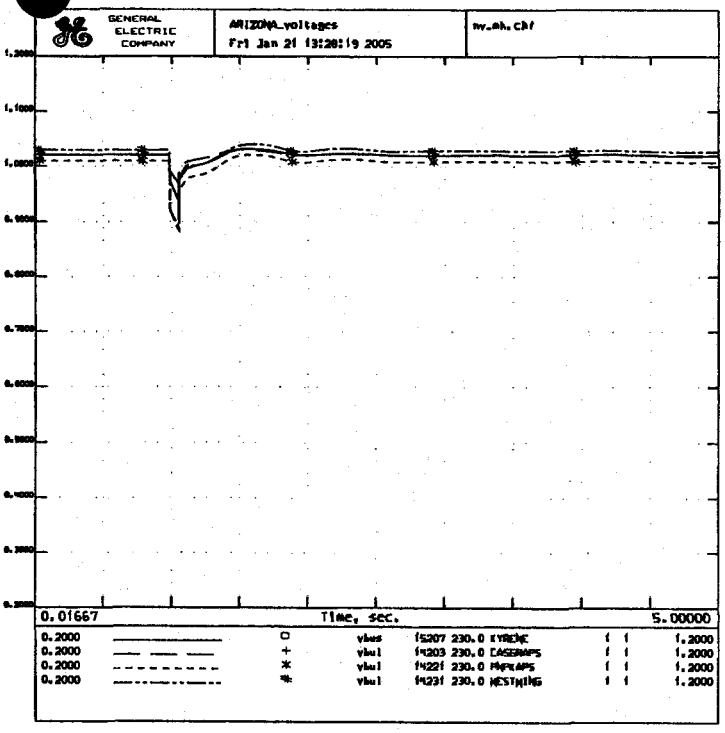
NAVAJO FLT, NV-MX, line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-MX STAB; 1/0S; T+0 3P FLT NV500; 6% FLT DMPING; FLSH CAPS
NV-MCX/MX,MX-EOX;4C CLR FLT N/NV-MX;8C REIN;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



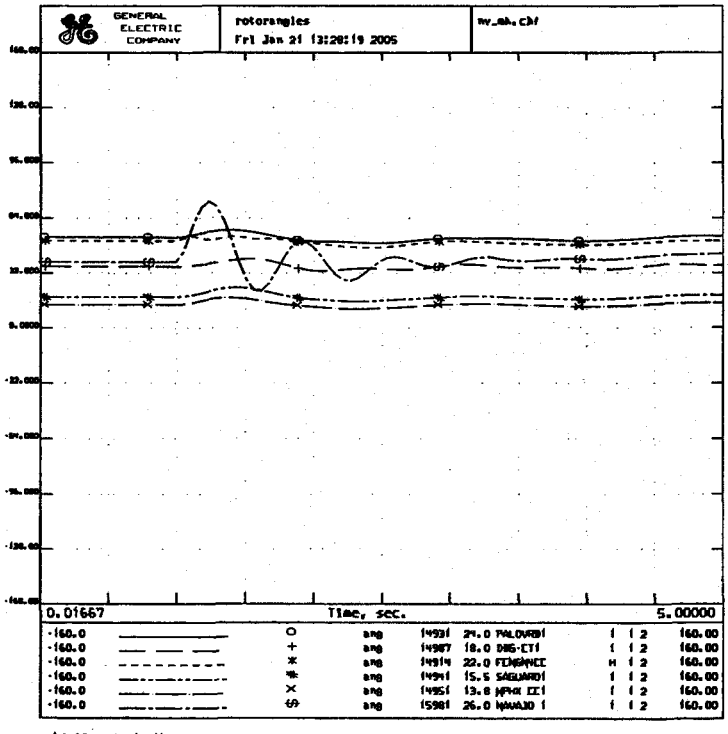
NAVAJO FLT, NV-MX, line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-MX STAB; 1/0S; T+0 3P FLT NV500; 6% FLT DMPING; FLSH CAPS
NV-MCX/MX,MX-EOX;4C CLR FLT N/NV-MX;8C REIN;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



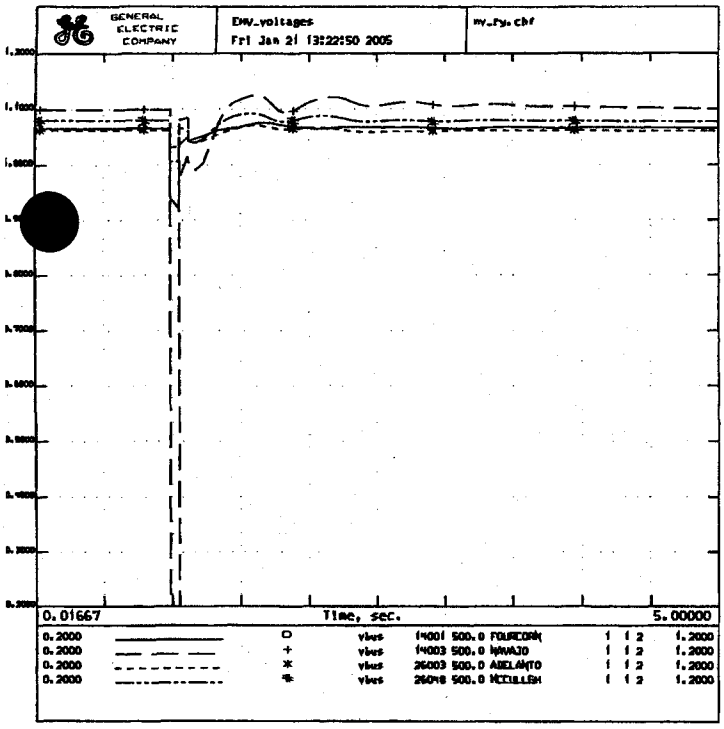
NAVAJO FLT, NV-MX, line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-MX STAB; 1/0S; T+0 3P FLT NV500; 6% FLT DMPING; FLSH CAPS
NV-MCX/MX,MX-EOX;4C CLR FLT N/NV-MX;8C REIN;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



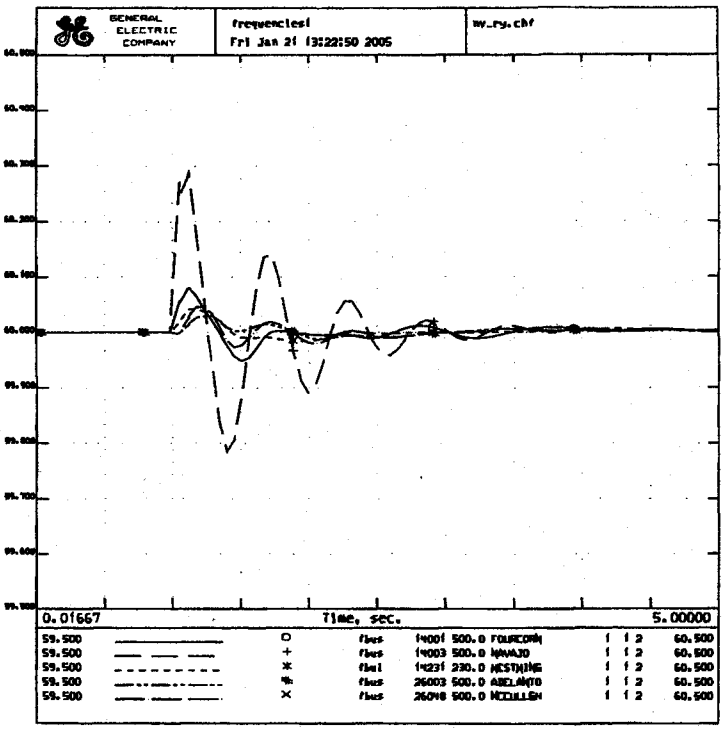
NAVAJO FLT, NV-MX, line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-MX STAB; 1/0S; T+0 3P FLT NV500; 6% FLT DMPING; FLSH CAPS
NV-MCX/MX,MX-EOX;4C CLR FLT N/NV-MX;8C REIN;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



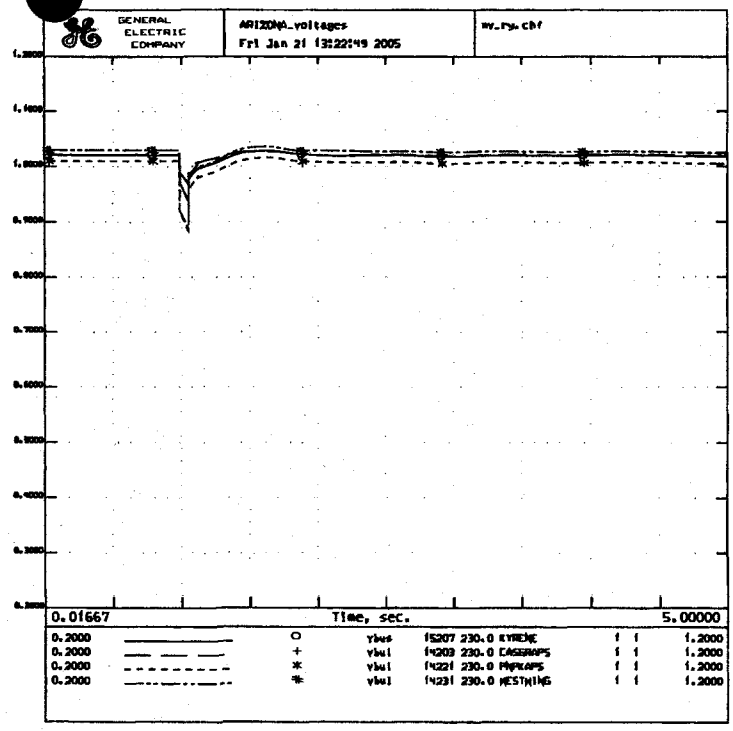
NAVAJO FLT NV-RY LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-RY STAB; 1/05; T=0 3P FLT NV500; 6% FLT DMPING;FLSH CAPS
NV-MCX/MX,MX-EOX;4C CLR FLT N/NV-RY;8C REI;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



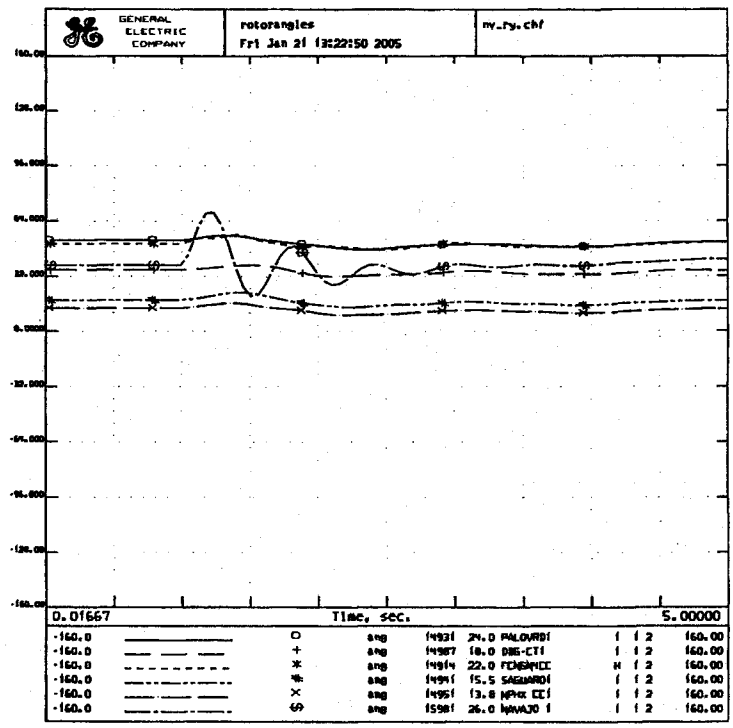
NAVAJO FLT NV-RY LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-RY STAB; 1/05; T=0 3P FLT NV500; 6% FLT DMPING;FLSH CAPS
NV-MCX/MX,MX-EOX;4C CLR FLT N/NV-RY;8C REI;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



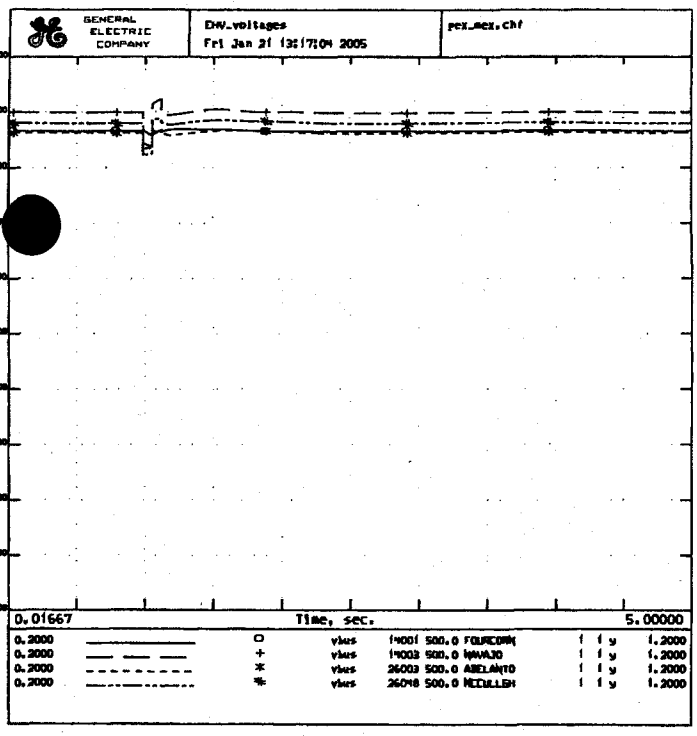
NAVAJO FLT NV-RY LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
[illegible]RY STAB; 1/05; T=0 3P FLT NV500; 6% FLT DMPING;FLSH CAPS
[illegible]CX/MX,MX-EOX;4C CLR FLT N/NV-RY;8C REI;2014.dyd;MSCC.bat

[illegible] Case for 10-Year Plan Stability



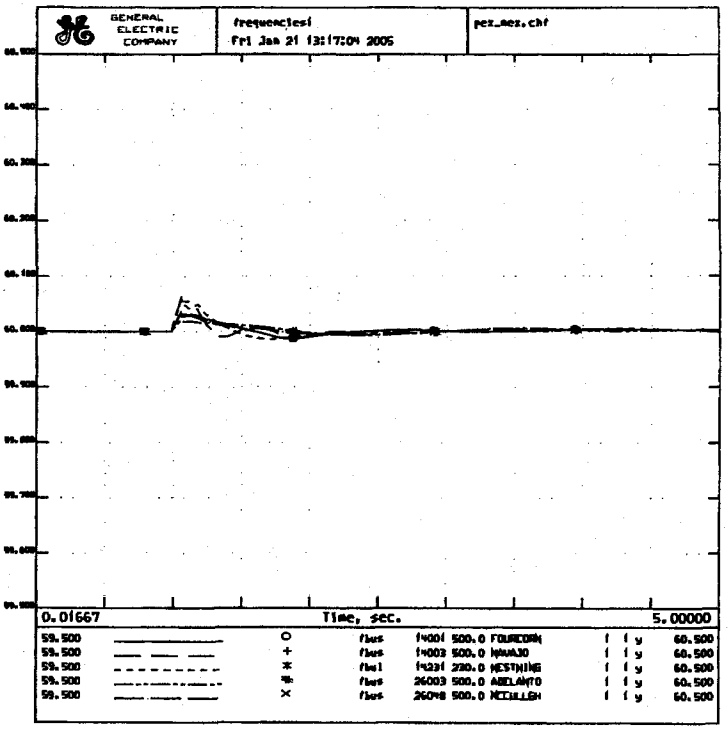
NAVAJO FLT NV-RY LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NV-RY STAB; 1/05; T=0 3P FLT NV500; 6% FLT DMPING;FLSH CAPS
NV-MCX/MX,MX-EOX;4C CLR FLT N/NV-RY;8C REI;2014.dyd;MSCC.bat

2014 Case for 10-Year Plan Stability



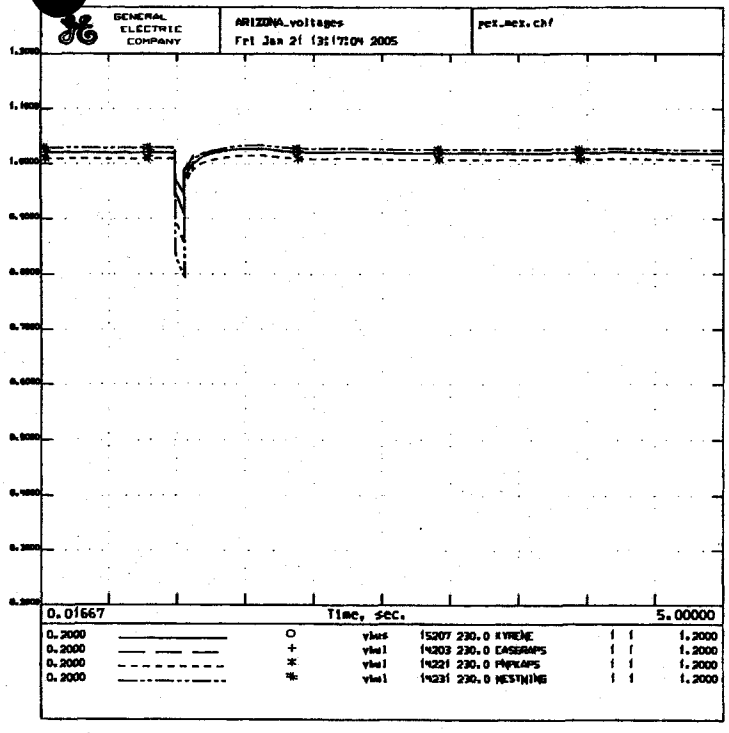
PERKINS FLT PEX-NEX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PEX-NEX STAB: 01/05: T+0 3P FLT PEX500:FLSH CAPS NE-YV/YV-NN.
NV-NE/NN:NC CLR FLT N/PEX-NEX:BC RE1N:2014.dyd:HSCC.bat

2014 Case for 10-Year Plan Stability



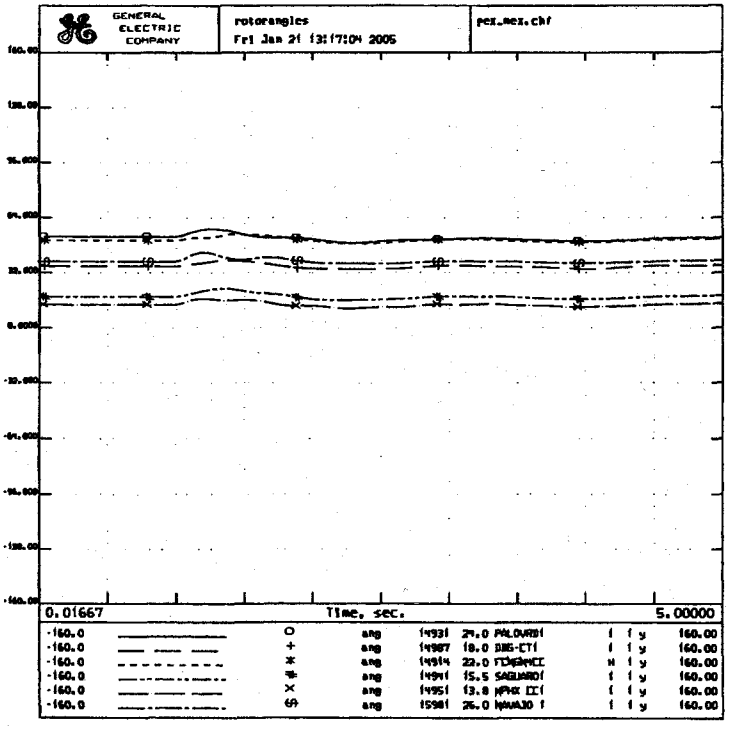
PERKINS FLT PEX-NEX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PEX-NEX STAB: 01/05: T+0 3P FLT PEX500:FLSH CAPS NE-YV/YV-NN.
NV-NE/NN:NC CLR FLT N/PEX-NEX:BC RE1N:2014.dyd:HSCC.bat

2014 Case for 10-Year Plan Stability



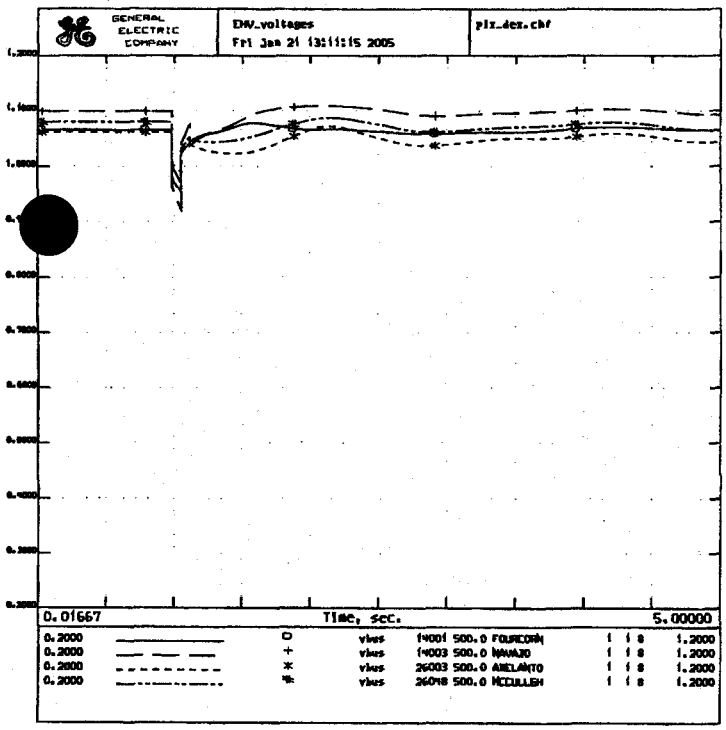
PERKINS FLT PEX-NEX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PEX-NEX STAB: 01/05: T+0 3P FLT PEX500:FLSH CAPS NE-YV/YV-NN.
NV-NE/NN:NC CLR FLT N/PEX-NEX:BC RE1N:2014.dyd:HSCC.bat

2014 Case for 10-Year Plan Stability



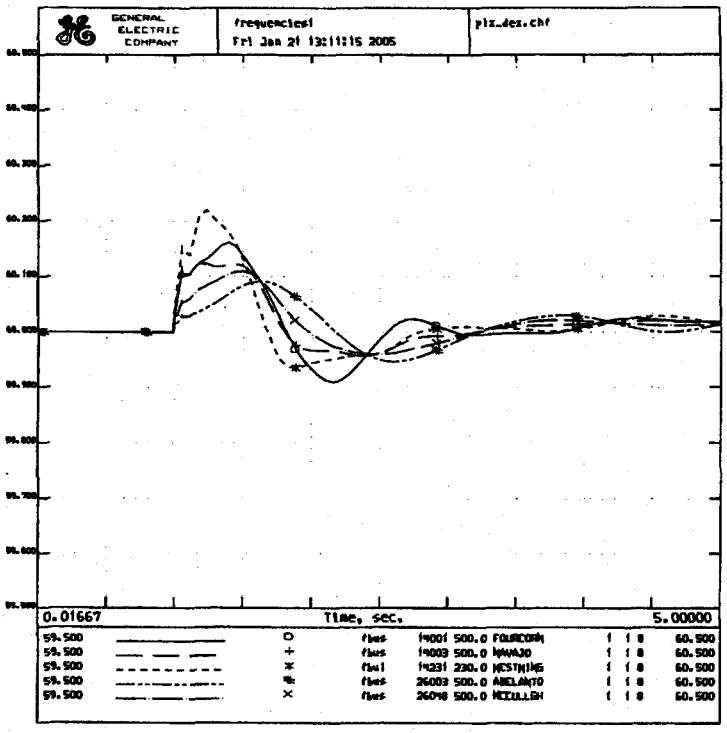
PERKINS FLT PEX-NEX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PEX-NEX STAB: 01/05: T+0 3P FLT PEX500:FLSH CAPS NE-YV/YV-NN.
NV-NE/NN:NC CLR FLT N/PEX-NEX:BC RE1N:2014.dyd:HSCC.bat

2014 Case for 10-Year Plan Stability



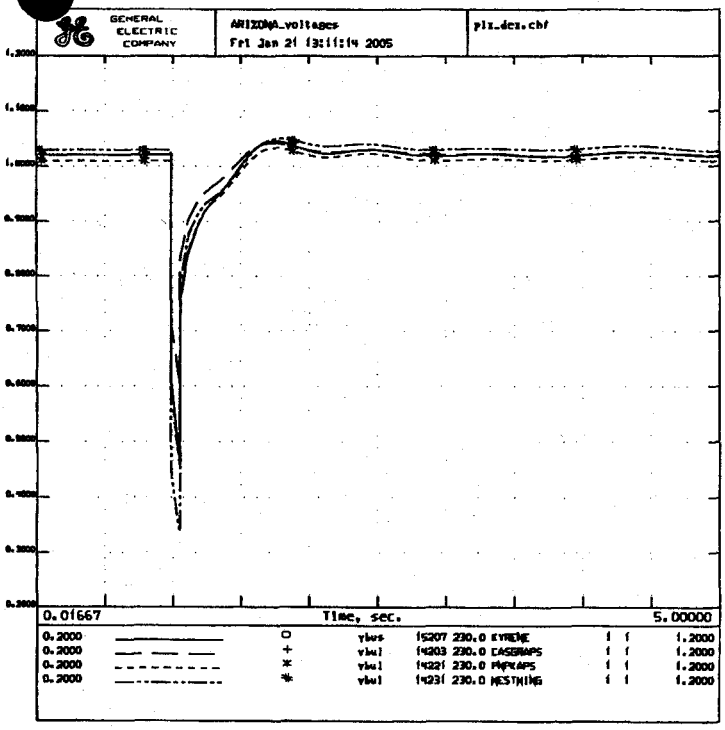
PALO VERDE FLT. g/PLX-DEX line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-DVX STAB; 1/05; T+0 3P FLT PLX500;10% FLT DMPING;FLSH CAPS
NV-NC/NC-YV,PLX-DEX/NG;NC CLR FLT N/PLX-DVX;BC RE1N;2014.dyd;KSCC.bat

2014 Case for 10-Year Plan Stability



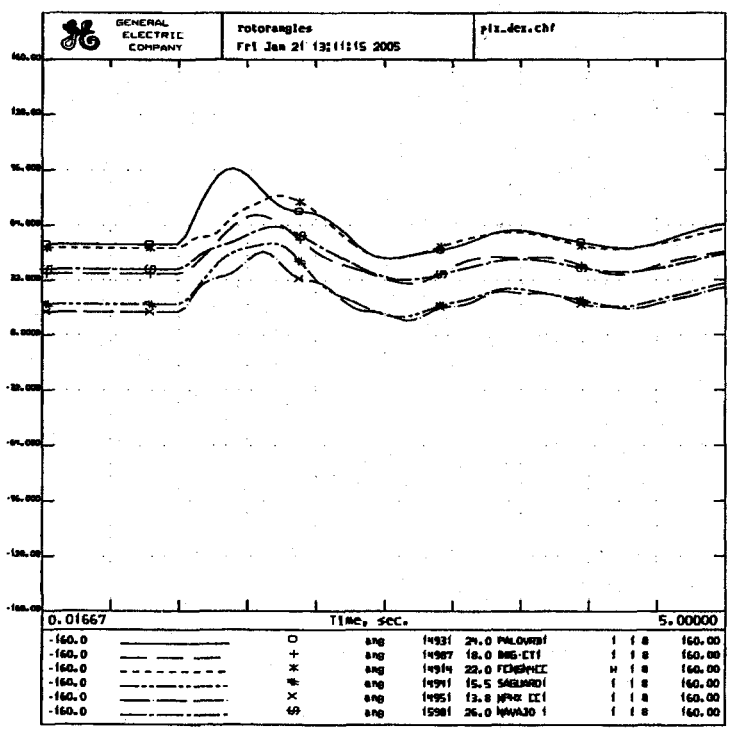
PALO VERDE FLT. g/PLX-DEX line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-DVX STAB; 1/05; T+0 3P FLT PLX500;10% FLT DMPING;FLSH CAPS
NV-NC/NC-YV,PLX-DEX/NG;NC CLR FLT N/PLX-DVX;BC RE1N;2014.dyd;KSCC.bat

2014 Case for 10-Year Plan Stability



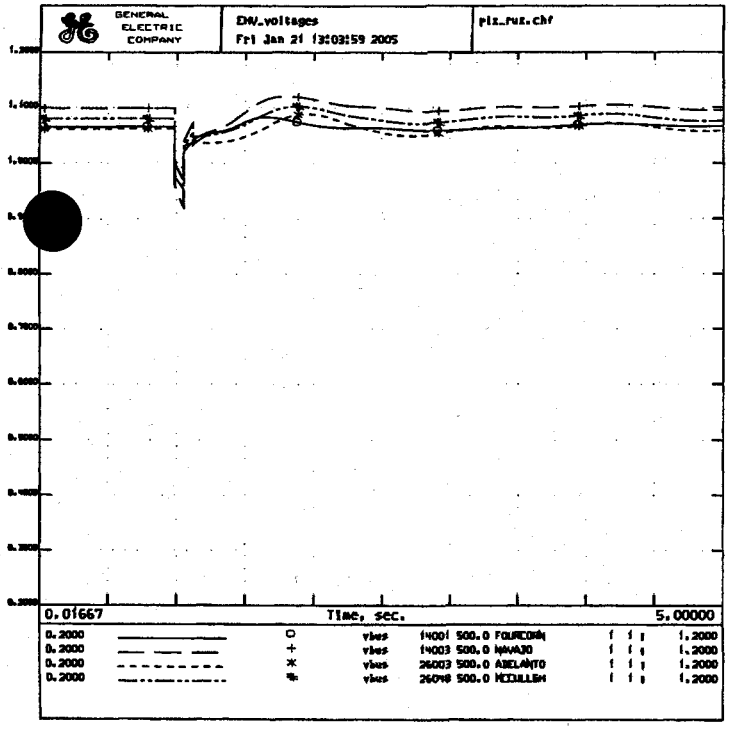
PALO VERDE FLT. g/PLX-DEX line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-DVX STAB; 1/05; T+0 3P FLT PLX500;10% FLT DMPING;FLSH CAPS
NV-NC/NC-YV,PLX-DEX/NG;NC CLR FLT N/PLX-DVX;BC RE1N;2014.dyd;KSCC.bat

2014 Case for 10-Year Plan Stability



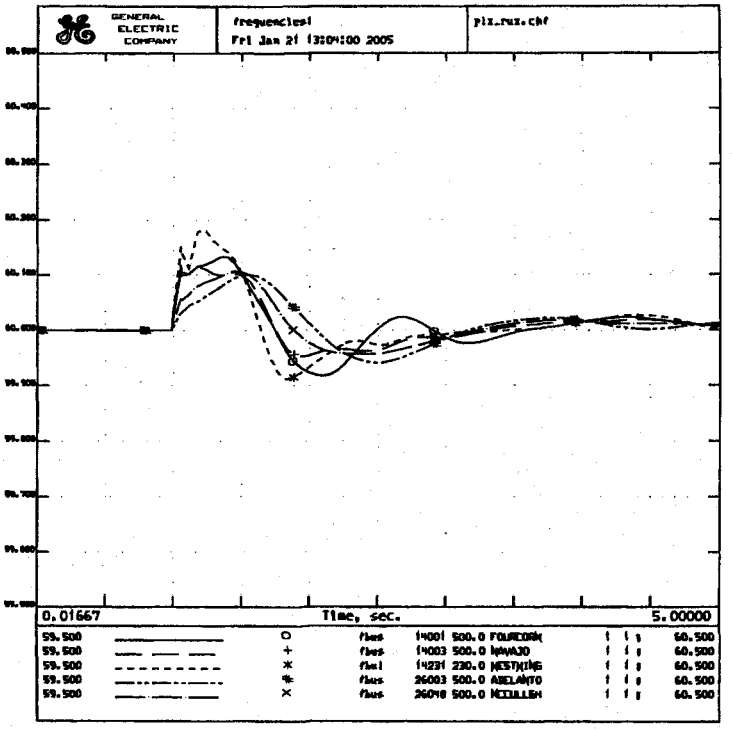
PALO VERDE FLT. g/PLX-DEX line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-DVX STAB; 1/05; T+0 3P FLT PLX500;10% FLT DMPING;FLSH CAPS
NV-NC/NC-YV,PLX-DEX/NG;NC CLR FLT N/PLX-DVX;BC RE1N;2014.dyd;KSCC.bat

2014 Case for 10-Year Plan Stability



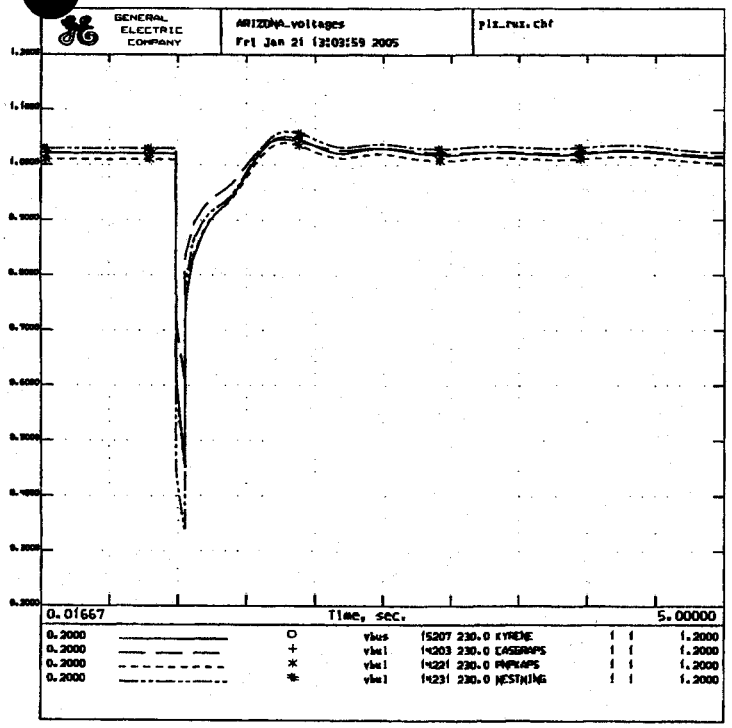
PALO VERDE FLT PLX-RUX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-RUX STAB; 01/05; T+0 3P FLT PLX500;10% FLT BMP1NG;FLSH CAPS
\\pv-hkp/hk-yv,PLX-BEX/NG;HC CLR FLT H/PLX-RUX;BC RE1N;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



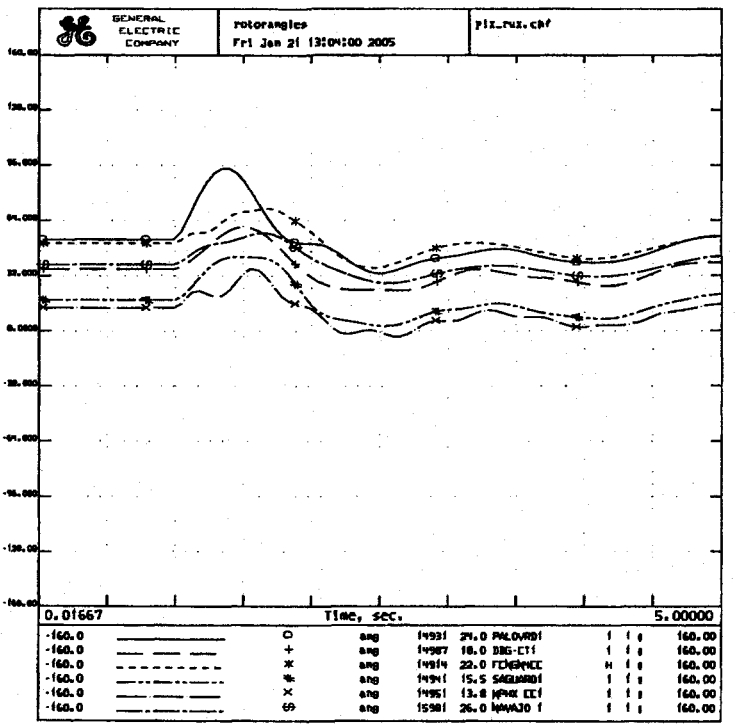
PALO VERDE FLT PLX-RUX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-RUX STAB; 01/05; T+0 3P FLT PLX500;10% FLT BMP1NG;FLSH CAPS
\\pv-hkp/hk-yv,PLX-BEX/NG;HC CLR FLT H/PLX-RUX;BC RE1N;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



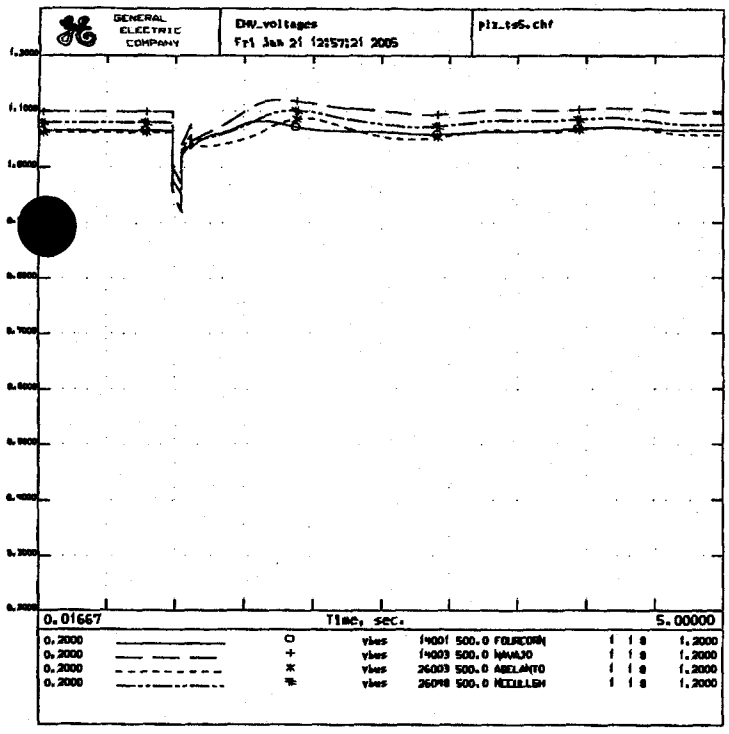
PALO VERDE FLT PLX-RUX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-RUX STAB; 01/05; T+0 3P FLT PLX500;10% FLT BMP1NG;FLSH CAPS
\\pv-hkp/hk-yv,PLX-BEX/NG;HC CLR FLT H/PLX-RUX;BC RE1N;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



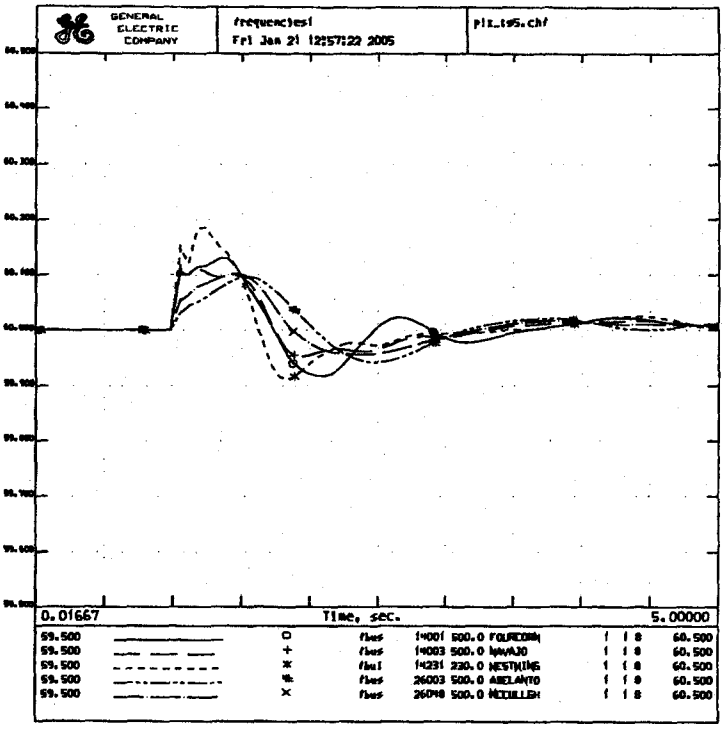
PALO VERDE FLT PLX-RUX LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-RUX STAB; 01/05; T+0 3P FLT PLX500;10% FLT BMP1NG;FLSH CAPS
\\pv-hkp/hk-yv,PLX-BEX/NG;HC CLR FLT H/PLX-RUX;BC RE1N;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



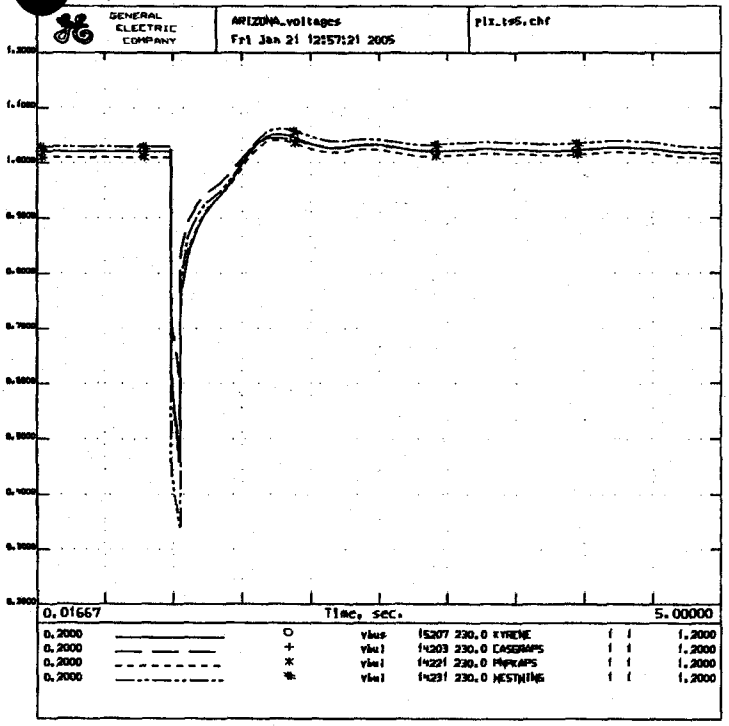
PALO VERDE FLT PLX-TSS LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-TSS STAB: 01/05: T=0 3P FLT PLX500:10% FLT DMPING:FLSH CAPS
NV-NX/NX-YV,PLX-BEX/NG:HC CLR FLT N/PLX-TSS:BC RE1%:2014.dyd:HSCC.bpt

2014 Case for 10-Year Plan Stability



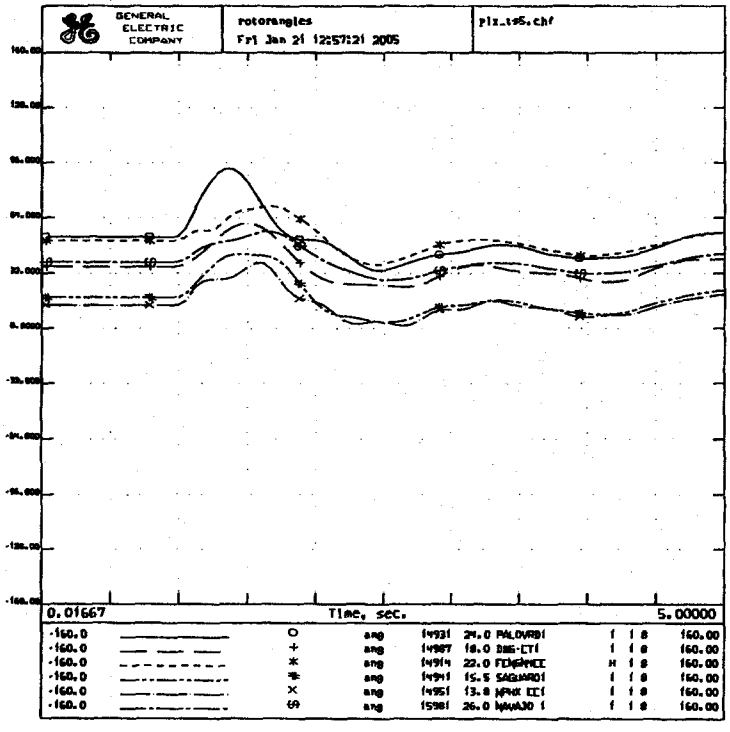
PALO VERDE FLT PLX-TSS LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-TSS STAB: 01/05: T=0 3P FLT PLX500:10% FLT DMPING:FLSH CAPS
NV-NX/NX-YV,PLX-BEX/NG:HC CLR FLT N/PLX-TSS:BC RE1%:2014.dyd:HSCC.bpt

2014 Case for 10-Year Plan Stability



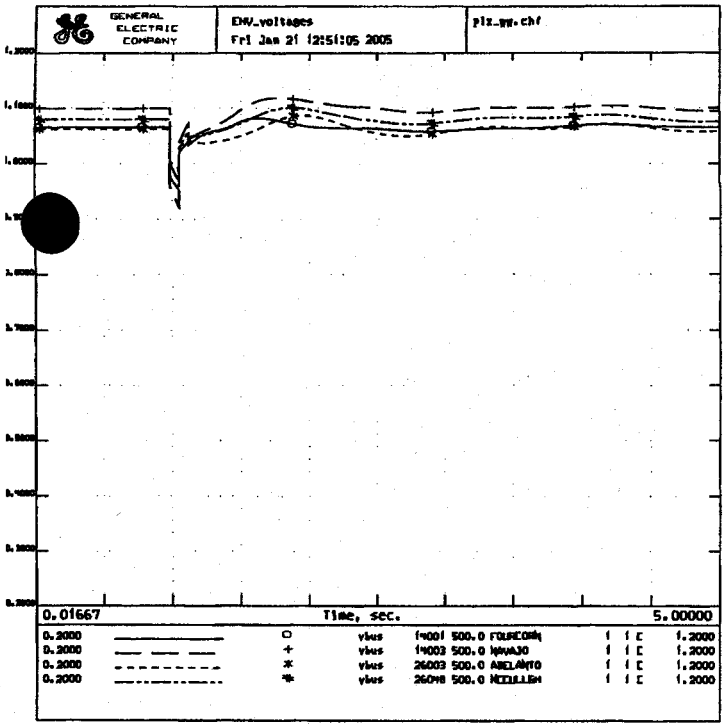
PALO VERDE FLT PLX-TSS LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-TSS STAB: 01/05: T=0 3P FLT PLX500:10% FLT DMPING:FLSH CAPS
NV-NX/NX-YV,PLX-BEX/NG:HC CLR FLT N/PLX-TSS:BC RE1%:2014.dyd:HSCC.bpt

2014 Case for 10-Year Plan Stability



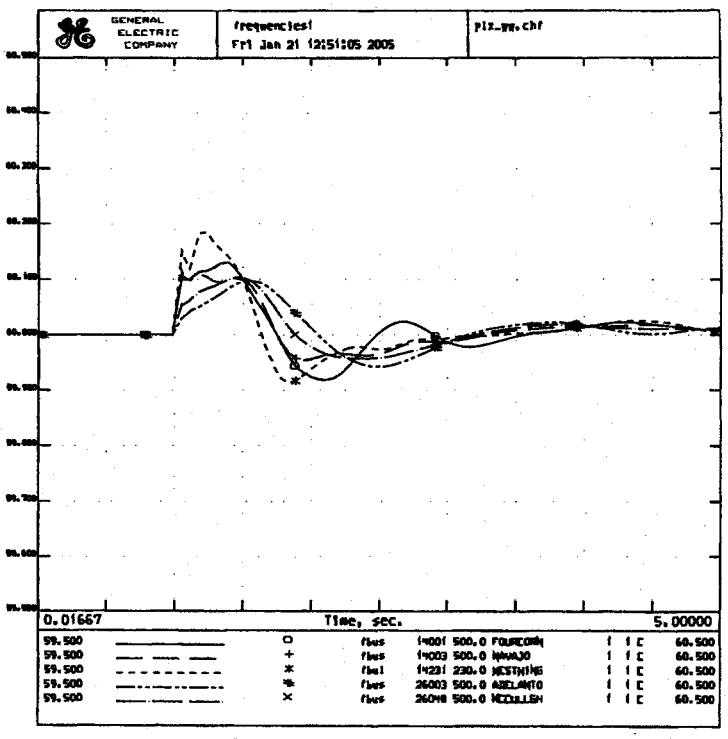
PALO VERDE FLT PLX-TSS LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-TSS STAB: 01/05: T=0 3P FLT PLX500:10% FLT DMPING:FLSH CAPS
NV-NX/NX-YV,PLX-BEX/NG:HC CLR FLT N/PLX-TSS:BC RE1%:2014.dyd:HSCC.bpt

2014 Case for 10-Year Plan Stability



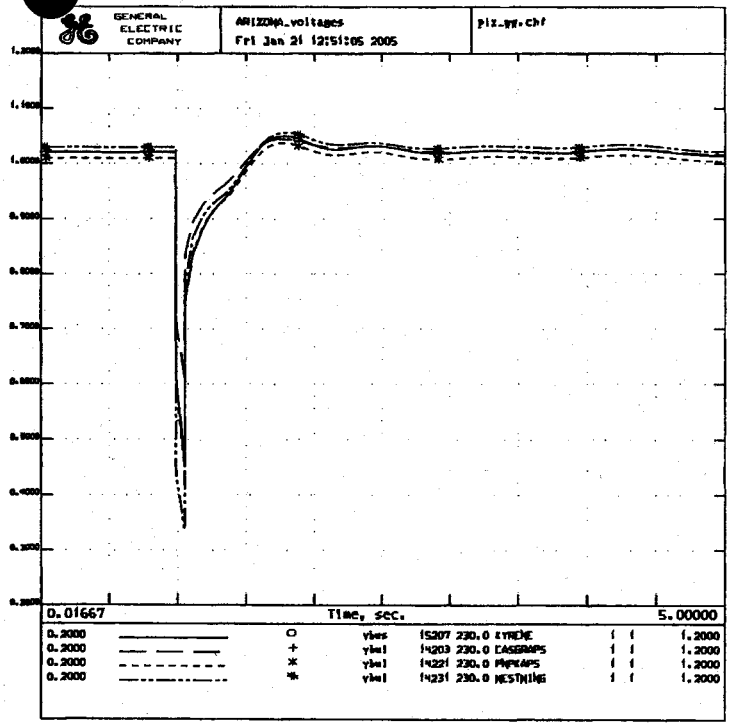
PALO VERDE FLT g/PLX-NM line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-NM STAB; 1/05; T+0 3P FLT PLX500;10% FLT DMPING;FLSH CAPS
\qv-NL/NL-YV,PLX-DEX/NG;+C CLR FLT N/PLX-NM;BC REIN;2014.dyd;RSCC.bat

2014 Case for 10-Year Plan Stability



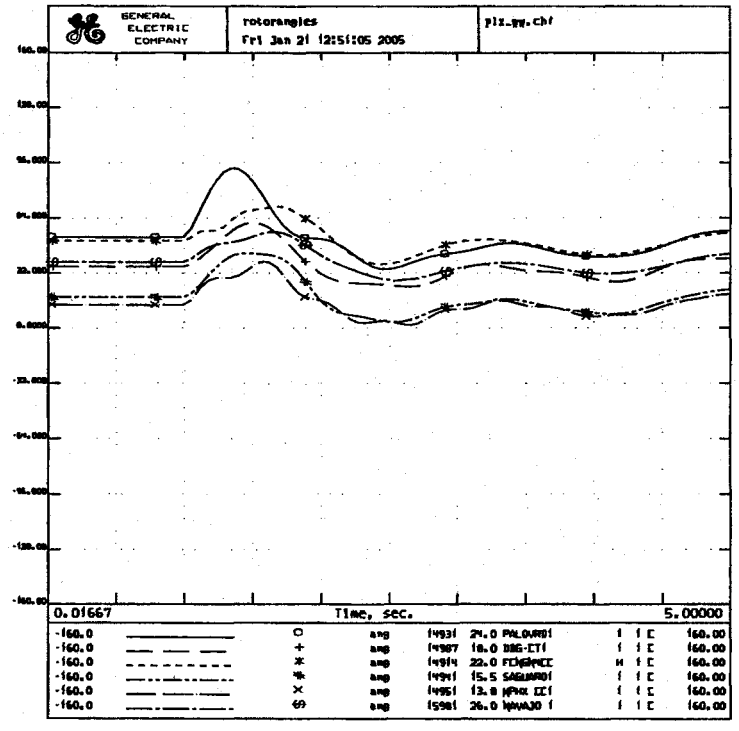
PALO VERDE FLT g/PLX-NM line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-NM STAB; 1/05; T+0 3P FLT PLX500;10% FLT DMPING;FLSH CAPS
\qv-NL/NL-YV,PLX-DEX/NG;+C CLR FLT N/PLX-NM;BC REIN;2014.dyd;RSCC.bat

2014 Case for 10-Year Plan Stability



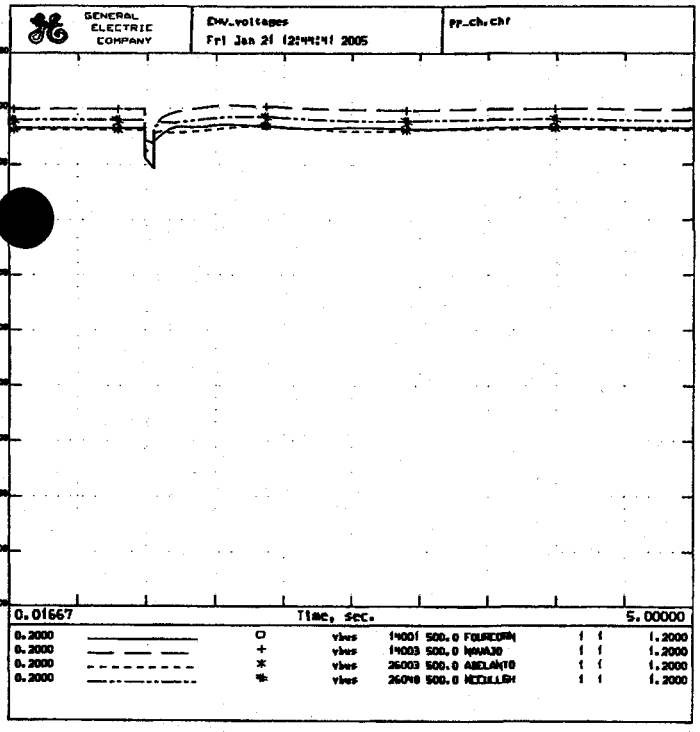
PALO VERDE FLT g/PLX-NM line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-NM STAB; 1/05; T+0 3P FLT PLX500;10% FLT DMPING;FLSH CAPS
\qv-NL/NL-YV,PLX-DEX/NG;+C CLR FLT N/PLX-NM;BC REIN;2014.dyd;RSCC.bat

2014 Case for 10-Year Plan Stability



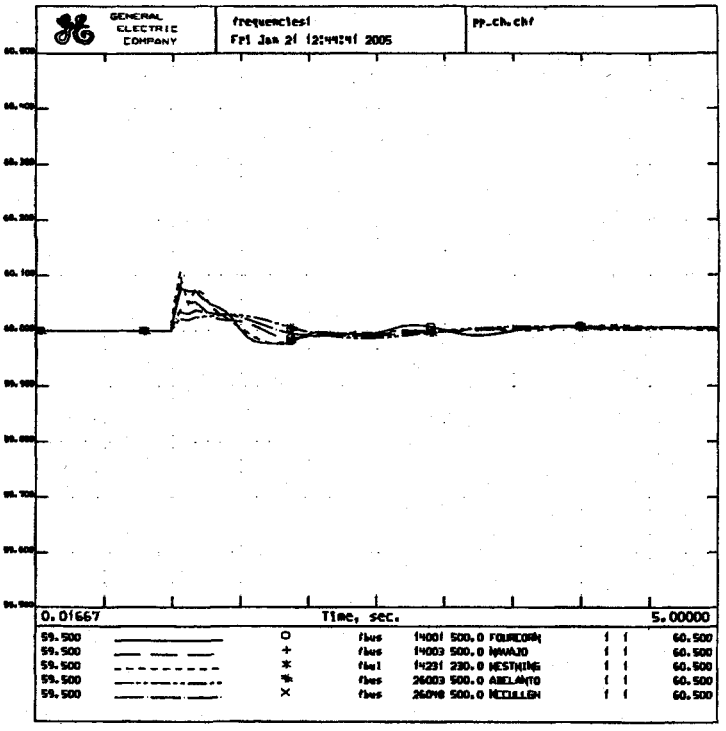
PALO VERDE FLT g/PLX-NM line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX-NM STAB; 1/05; T+0 3P FLT PLX500;10% FLT DMPING;FLSH CAPS
\qv-NL/NL-YV,PLX-DEX/NG;+C CLR FLT N/PLX-NM;BC REIN;2014.dyd;RSCC.bat

2014 Case for 10-Year Plan Stability



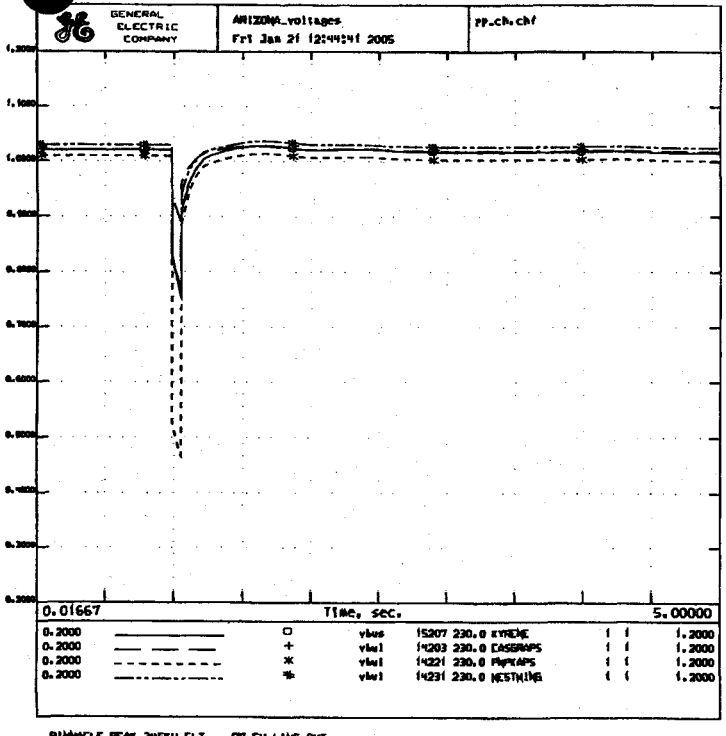
PINNACLE PEAK 345KV FLT PP-CH LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PP-CH STAB; 01/05; T=0 3P FLT PP345;
*C CLR FLT N/PP-CH;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



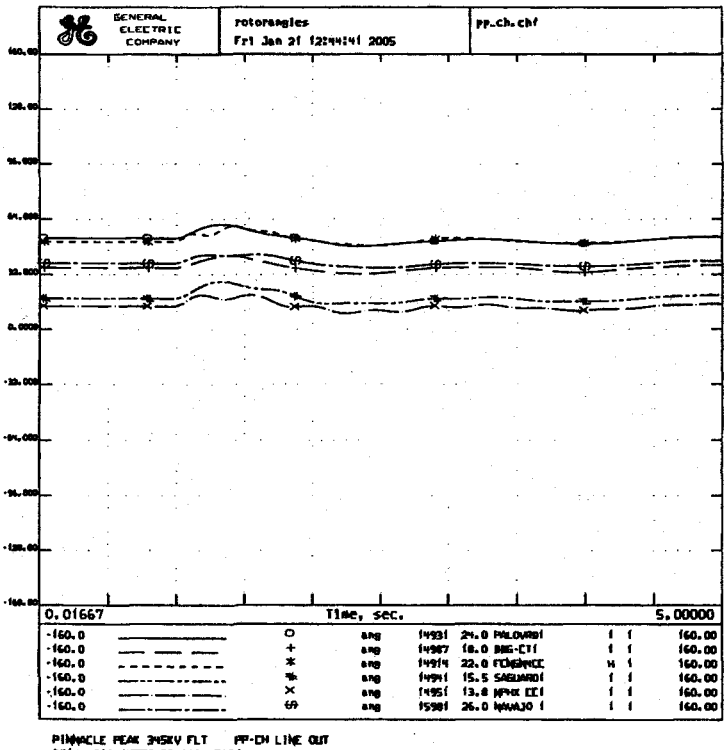
PINNACLE PEAK 345KV FLT PP-CH LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PP-CH STAB; 01/05; T=0 3P FLT PP345;
*C CLR FLT N/PP-CH;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



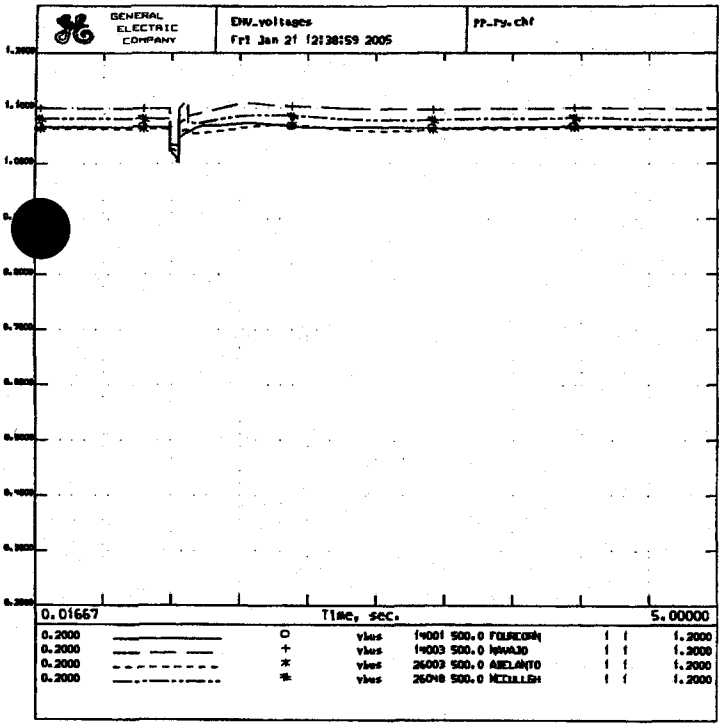
PINNACLE PEAK 345KV FLT PP-CH LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
[illegible]CH STAB; 01/05; T=0 3P FLT PP345;
[illegible]R FLT N/PP-CH;2014.dyd;HSCC.bpt

[illegible] Case for 10-Year Plan Stability



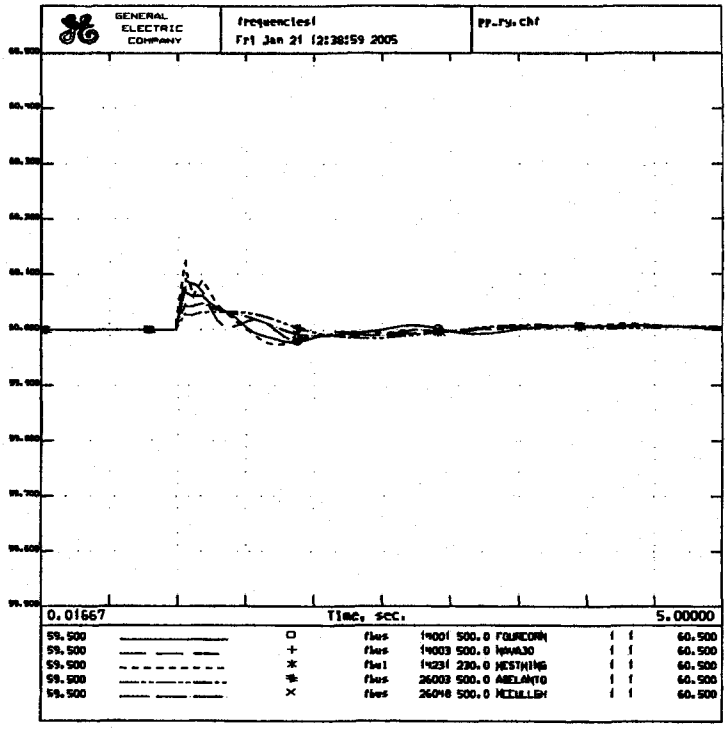
PINNACLE PEAK 345KV FLT PP-CH LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
PP-CH STAB; 01/05; T=0 3P FLT PP345;
*C CLR FLT N/PP-CH;2014.dyd;HSCC.bpt

2014 Case for 10-Year Plan Stability



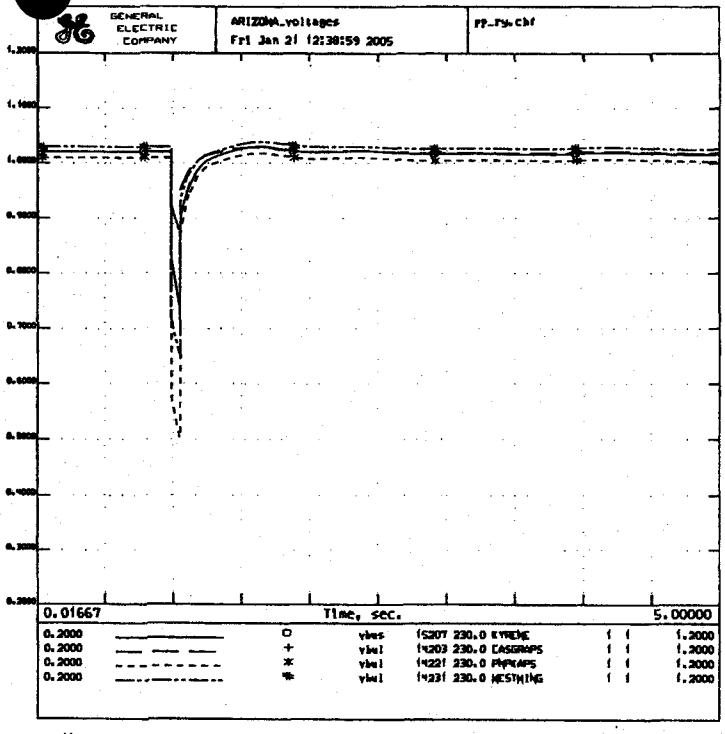
PINNACLE PEAK FLT. PP-RY line out
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PP-RY STAB; 1/05; T+0 3P FLT PP500;FLSH CAPS MX-YV/YV-MH,
NV-MX/MH*C CLR FLT M/PP-RY;BC RE1N;2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



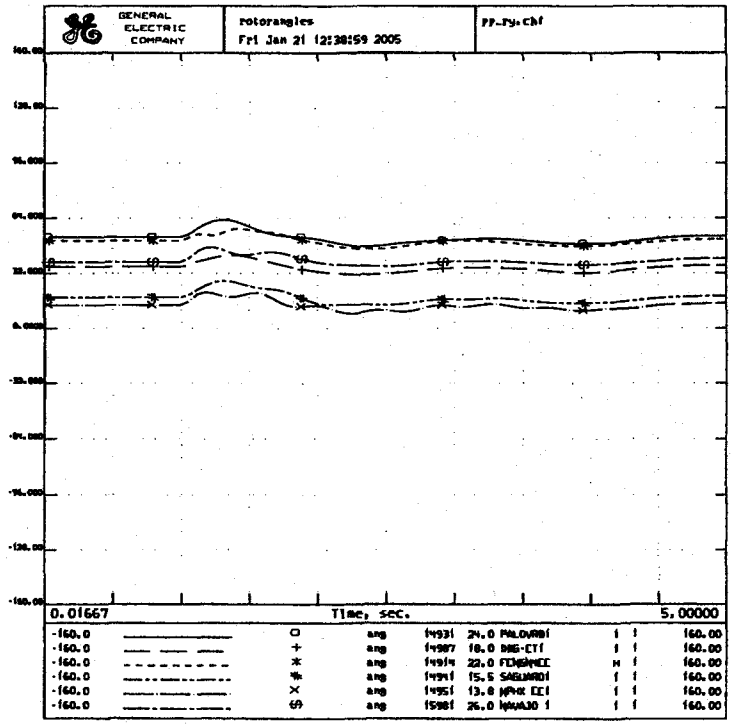
PINNACLE PEAK FLT. PP-RY line out
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PP-RY STAB; 1/05; T+0 3P FLT PP500;FLSH CAPS MX-YV/YV-MH,
NV-MX/MH*C CLR FLT M/PP-RY;BC RE1N;2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



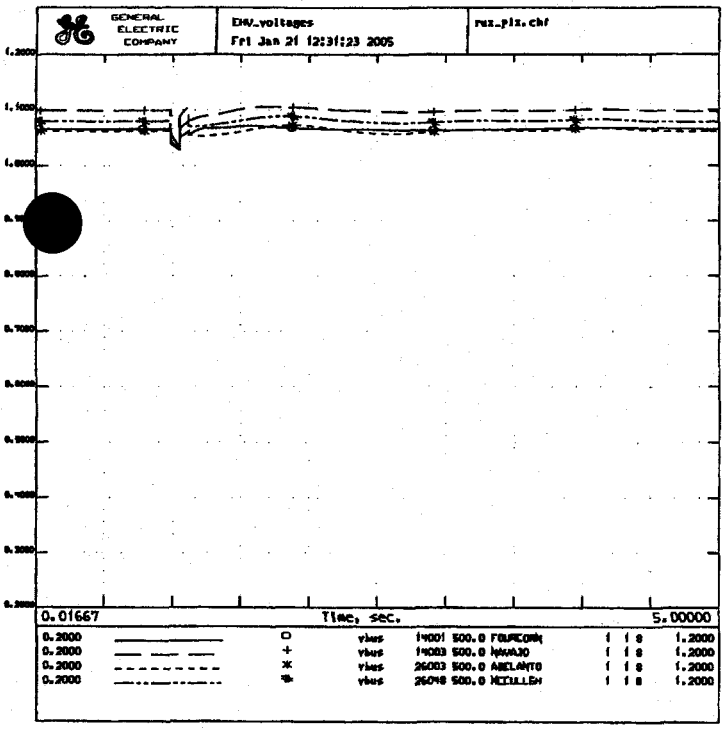
PINNACLE PEAK FLT. PP-RY line out
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PP-RY STAB; 1/05; T+0 3P FLT PP500;FLSH CAPS MX-YV/YV-MH,
MX/MH*C CLR FLT M/PP-RY;BC RE1N;2014.dyd WSCC.bat

Case for 10-Year Plan Stability



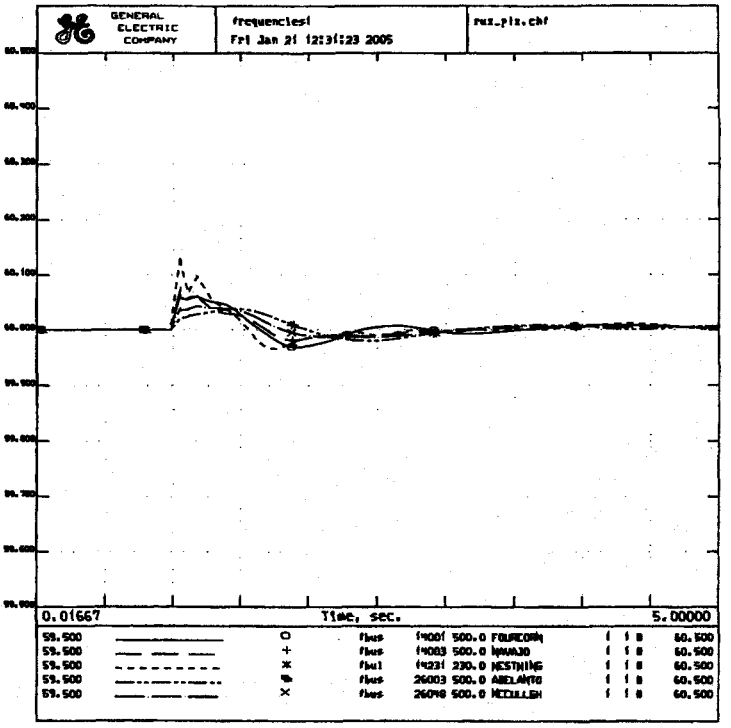
PINNACLE PEAK FLT. PP-RY line out
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PP-RY STAB; 1/05; T+0 3P FLT PP500;FLSH CAPS MX-YV/YV-MH,
NV-MX/MH*C CLR FLT M/PP-RY;BC RE1N;2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



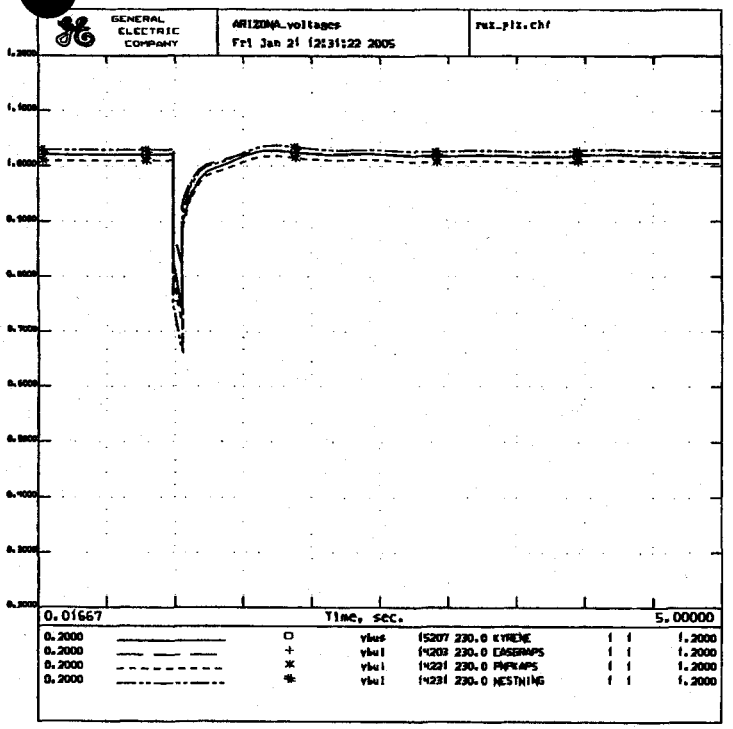
RUDD FLT RUX-PLX LINE OUT
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RUX-PLX STAB ●1; 01/05; T+0 3P FLT RUX500;10% FLT BMPING;FLSH CAPS
MV-MX/MX-YV,PLX-DEX/MG;MC CLR FLT M/RUX-PLX;BC RE1M;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



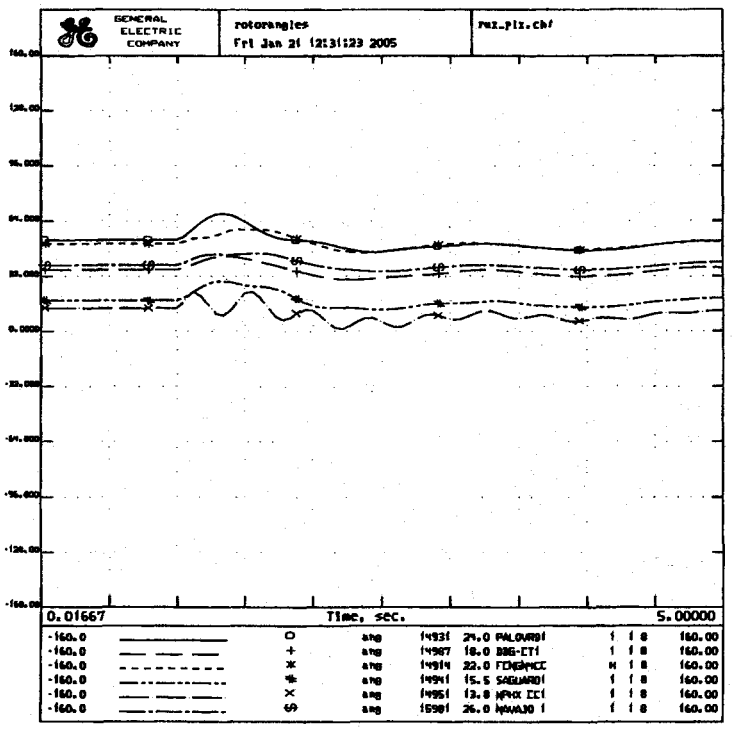
RUDD FLT RUX-PLX LINE OUT
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RUX-PLX STAB ●1; 01/05; T+0 3P FLT RUX500;10% FLT BMPING;FLSH CAPS
MV-MX/MX-YV,PLX-DEX/MG;MC CLR FLT M/RUX-PLX;BC RE1M;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



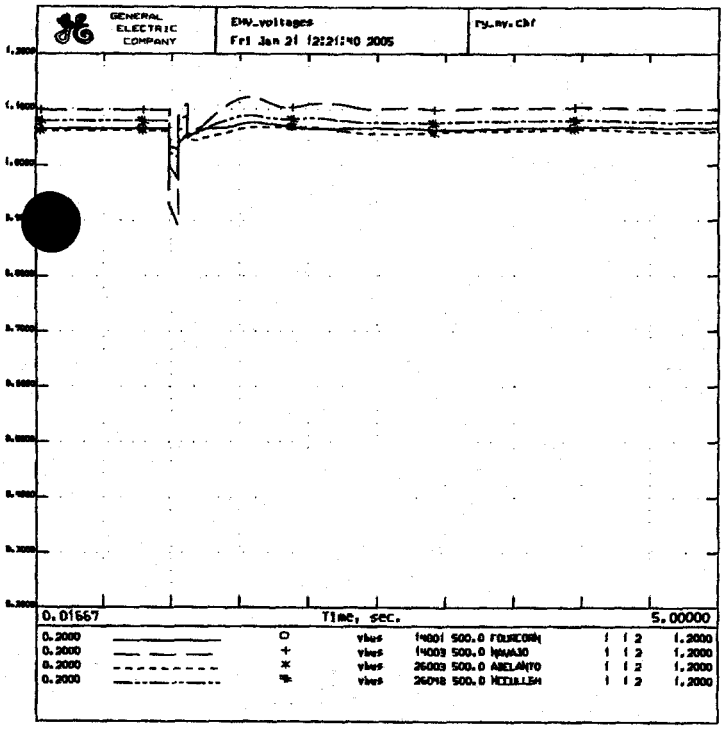
RUDD FLT RUX-PLX LINE OUT
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX STAB ●1; 01/05; T+0 3P FLT RUX500;10% FLT BMPING;FLSH CAPS
X-MX/MX-YV,PLX-DEX/MG;MC CLR FLT M/RUX-PLX;BC RE1M;2014.dyd;MSCC.bpt

Case for 10-Year Plan Stability



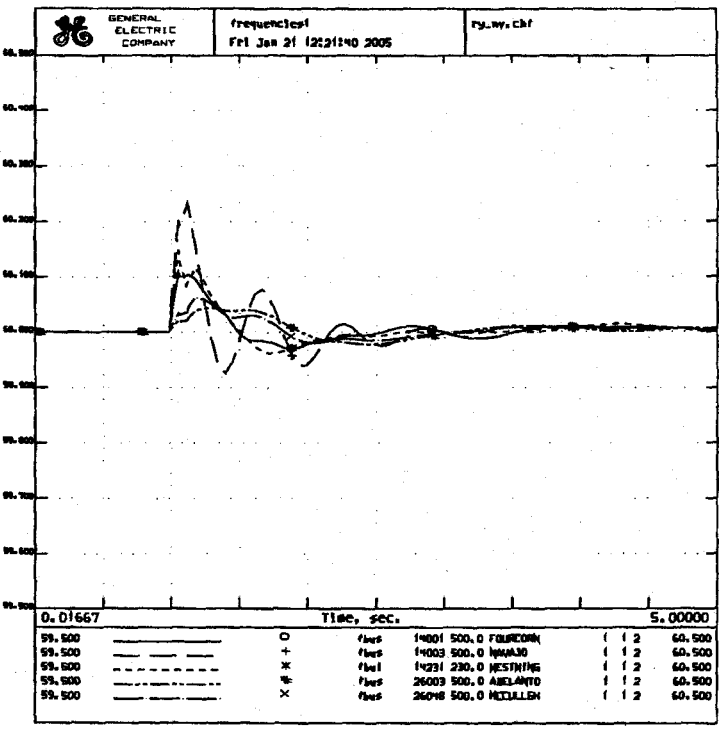
RUDD FLT RUX-PLX LINE OUT
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RUX-PLX STAB ●1; 01/05; T+0 3P FLT RUX500;10% FLT BMPING;FLSH CAPS
MV-MX/MX-YV,PLX-DEX/MG;MC CLR FLT M/RUX-PLX;BC RE1M;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



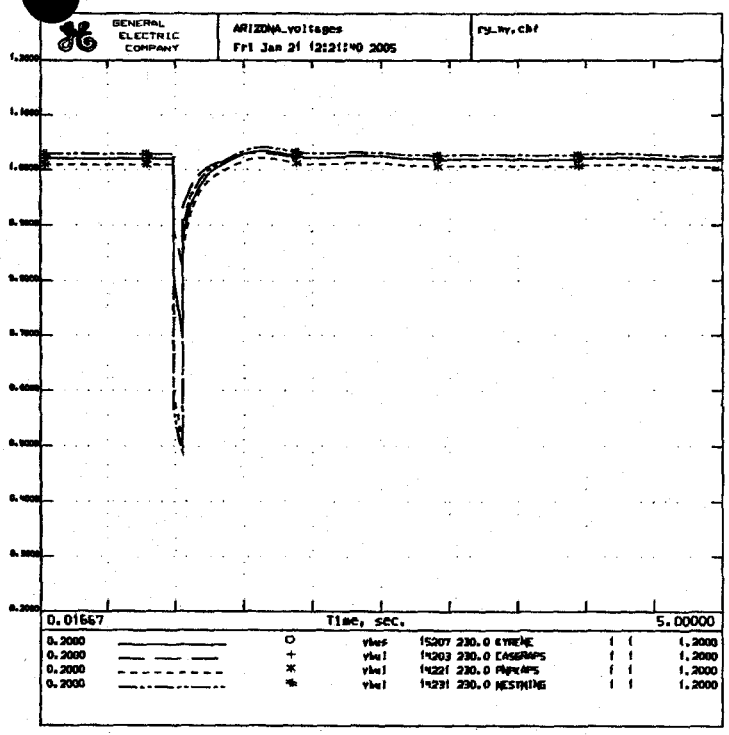
RACEWAY FLT RY-NY LINE OUT
2014 NSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-NY STAB; 1/05; T=0 3P FLT RY500; 6% FLT DMPING;FLSH CAPS
NY-NCX/NK,NK-EOX;4C CLR FLT N/RY-NY;8C REIN;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



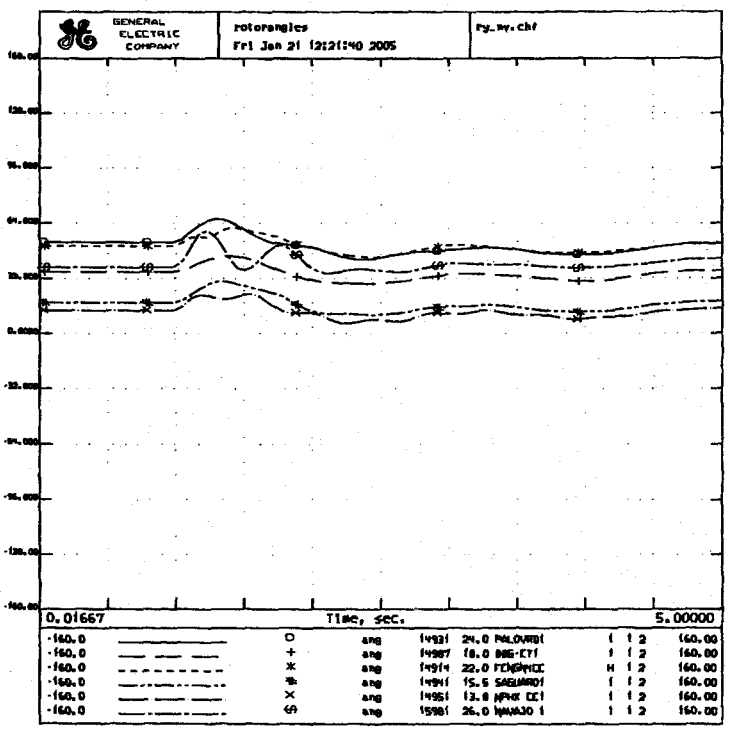
RACEWAY FLT RY-NY LINE OUT
2014 NSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-NY STAB; 1/05; T=0 3P FLT RY500; 6% FLT DMPING;FLSH CAPS
NY-NCX/NK,NK-EOX;4C CLR FLT N/RY-NY;8C REIN;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



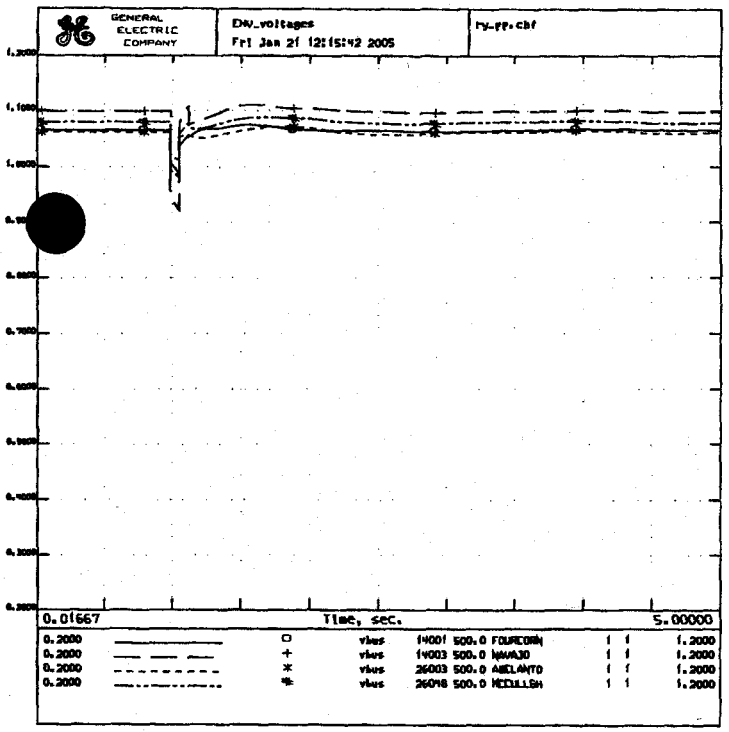
RACEWAY FLT RY-NY LINE OUT
2014 NSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
[illegible] STAB; 1/05; T=0 3P FLT RY500; 6% FLT DMPING;FLSH CAPS
[illegible]X/NK,NK-EOX;4C CLR FLT N/RY-NY;8C REIN;2014.dyd;NSCC.bat

[illegible] Case for 10-Year Plan Stability



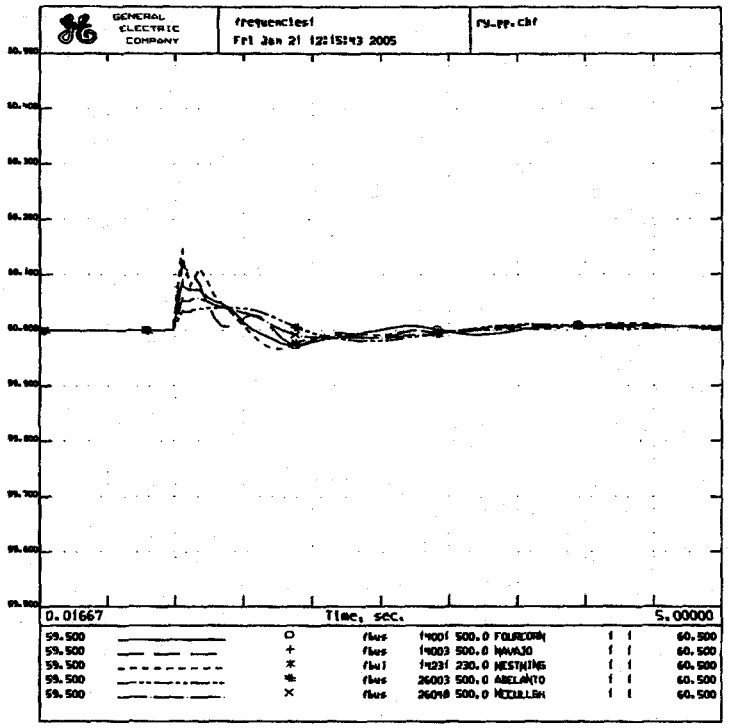
RACEWAY FLT RY-NY LINE OUT
2014 NSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-NY STAB; 1/05; T=0 3P FLT RY500; 6% FLT DMPING;FLSH CAPS
NY-NCX/NK,NK-EOX;4C CLR FLT N/RY-NY;8C REIN;2014.dyd;NSCC.bat

2014 Case for 10-Year Plan Stability



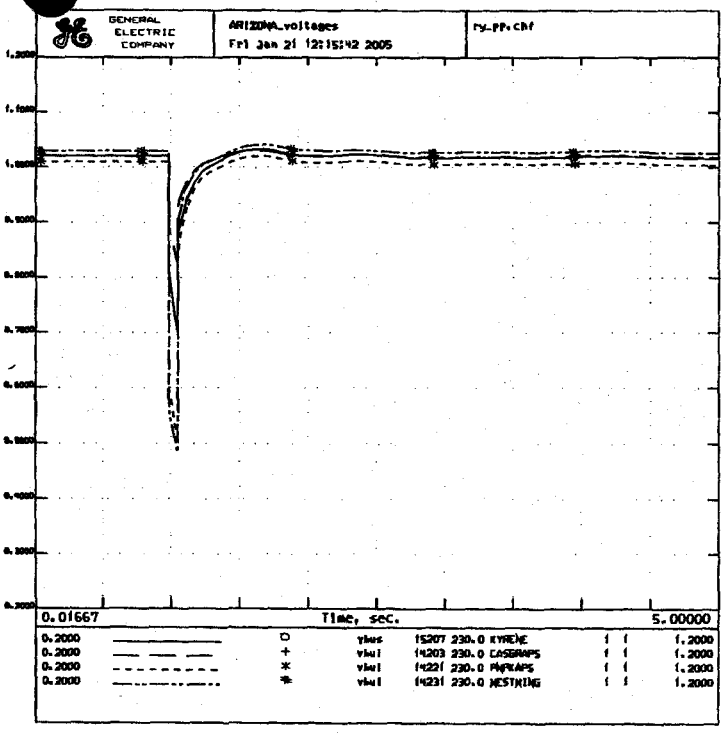
RACEWAY FLT, RY-PP line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-PP STAB; 1/05; T=0 3P FLT RY500;FLSH CAPS MX-YP/YP-MX,
NV-MX/MX=MC CLR FLT N/RY-PP;BC RE1N;2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



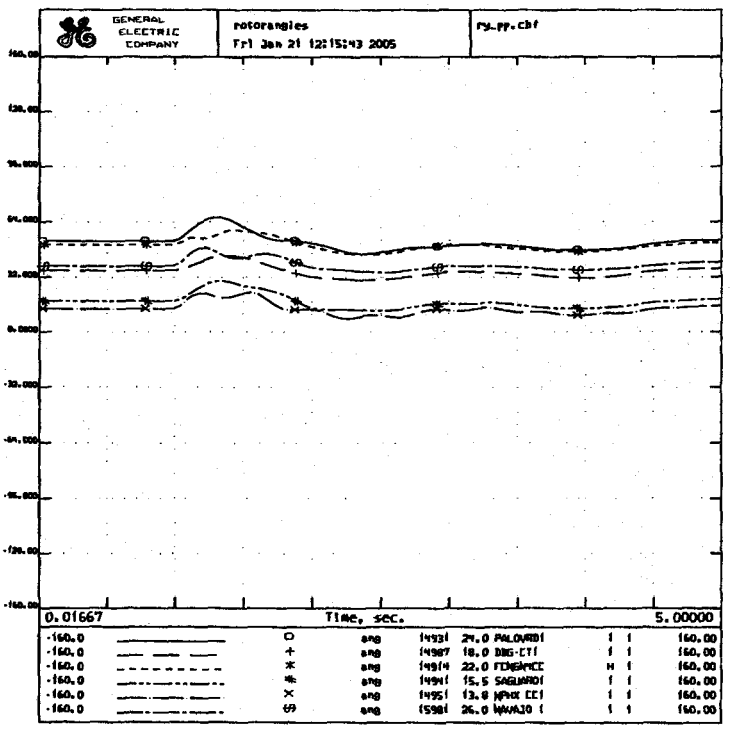
RACEWAY FLT, RY-PP line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-PP STAB; 1/05; T=0 3P FLT RY500;FLSH CAPS MX-YP/YP-MX,
NV-MX/MX=MC CLR FLT N/RY-PP;BC RE1N;2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



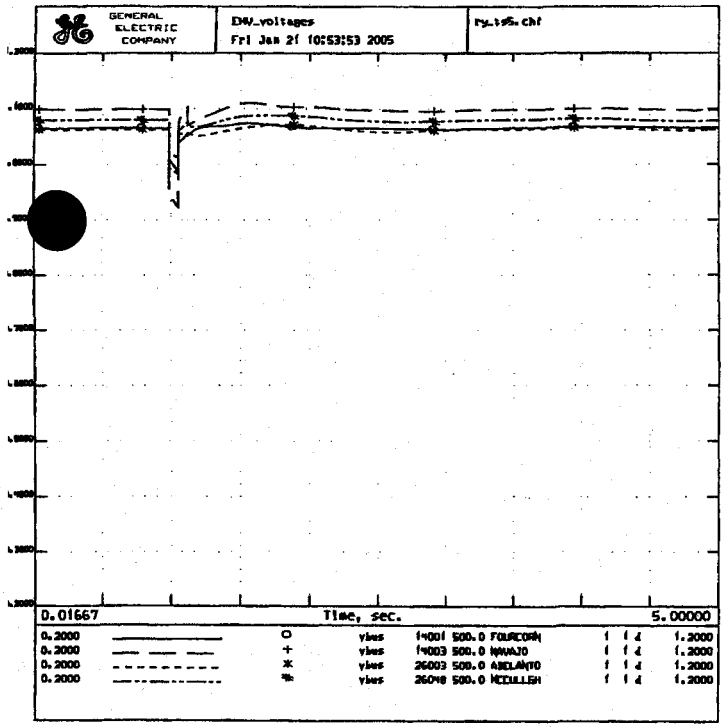
RACEWAY FLT, RY-PP line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
STAB; 1/05; T=0 3P FLT RY500;FLSH CAPS MX-YP/YP-MX,
MX=MC CLR FLT N/RY-PP;BC RE1N;2014.dyd MSCC.bat

Case for 10-Year Plan Stability



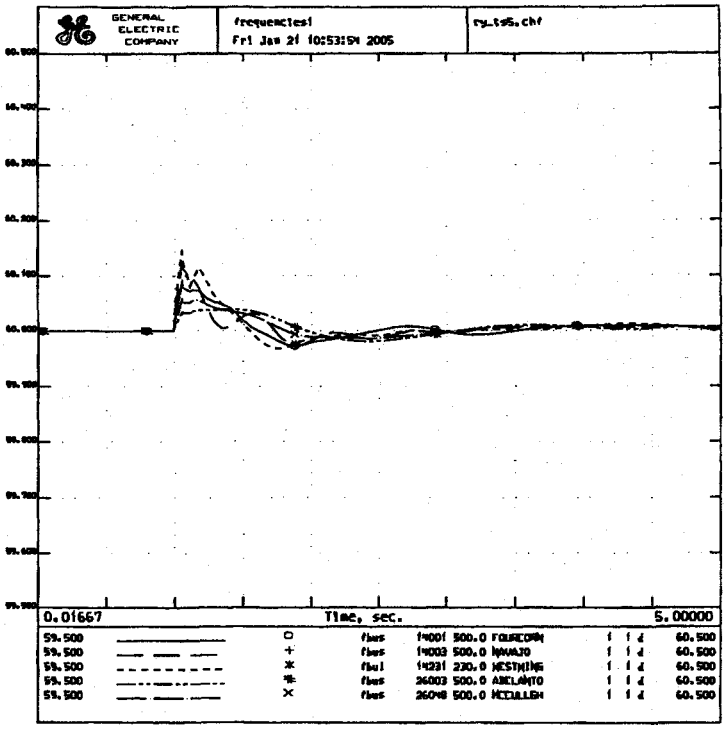
RACEWAY FLT, RY-PP line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-PP STAB; 1/05; T=0 3P FLT RY500;FLSH CAPS MX-YP/YP-MX,
NV-MX/MX=MC CLR FLT N/RY-PP;BC RE1N;2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



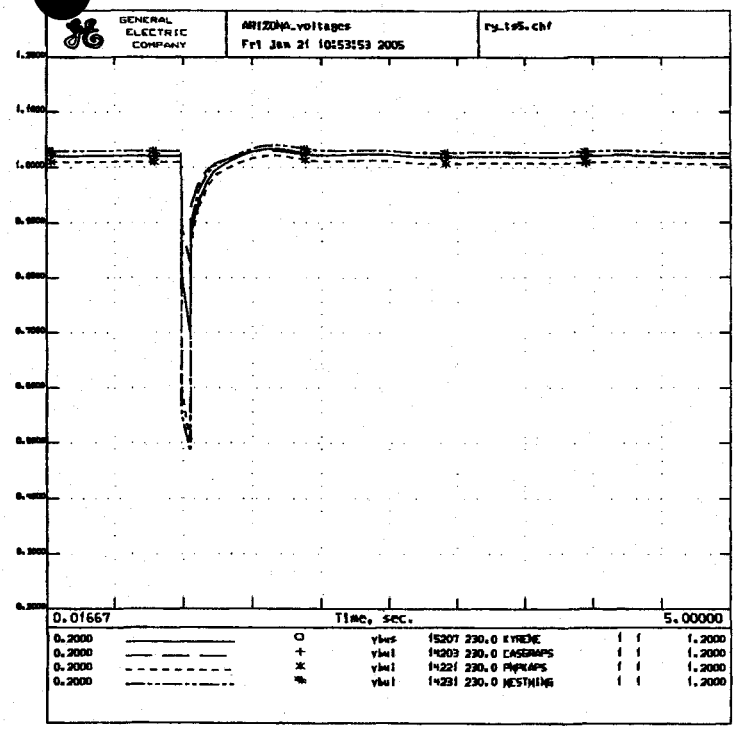
RACEWAY FLT. RY-TSS line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-TSS STAB; 1/05; T=0 3P FLT RYS00;FLSH CAPS NK-YP/YP-NM,
NV-NK/NM#C CLR FLT N/RY-TSS;BC REIN;2014.dyd NSCC.bat

2014 Case for 10-Year Plan Stability



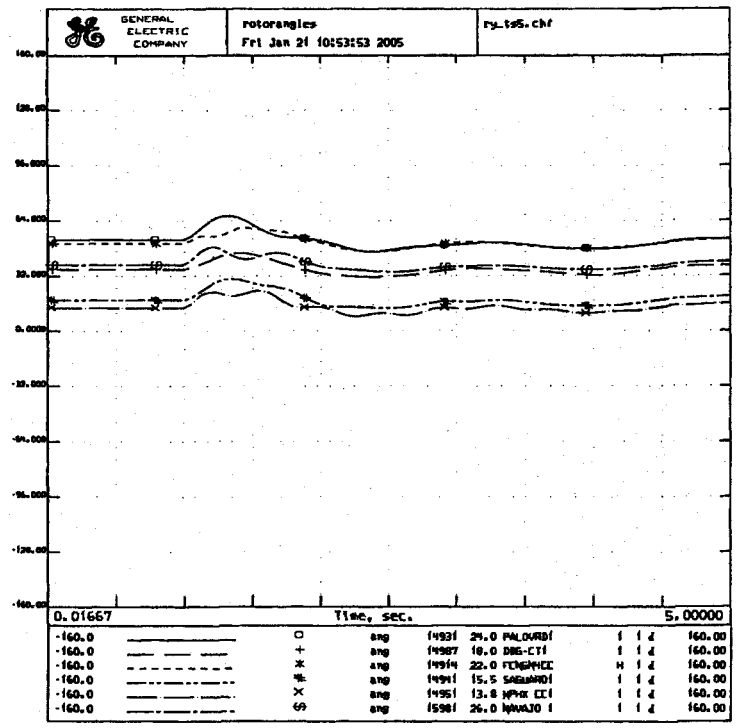
RACEWAY FLT. RY-TSS line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-TSS STAB; 1/05; T=0 3P FLT RYS00;FLSH CAPS NK-YP/YP-NM,
NV-NK/NM#C CLR FLT N/RY-TSS;BC REIN;2014.dyd NSCC.bat

2014 Case for 10-Year Plan Stability



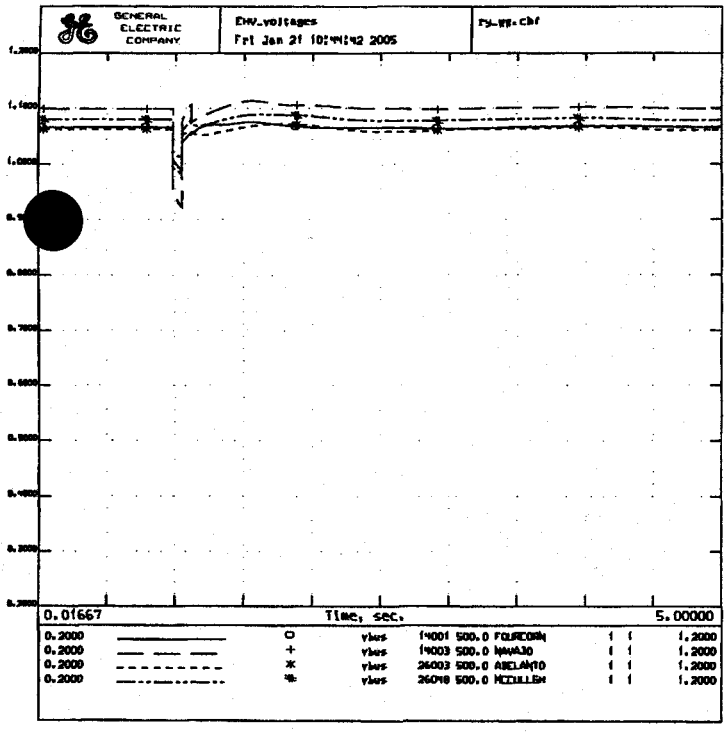
RACEWAY FLT. RY-TSS line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
[redacted]S STAB; 1/05; T=0 3P FLT RYS00;FLSH CAPS NK-YP/YP-NM,
[redacted]/NM#C CLR FLT N/RY-TSS;BC REIN;2014.dyd NSCC.bat

[redacted] Case for 10-Year Plan Stability



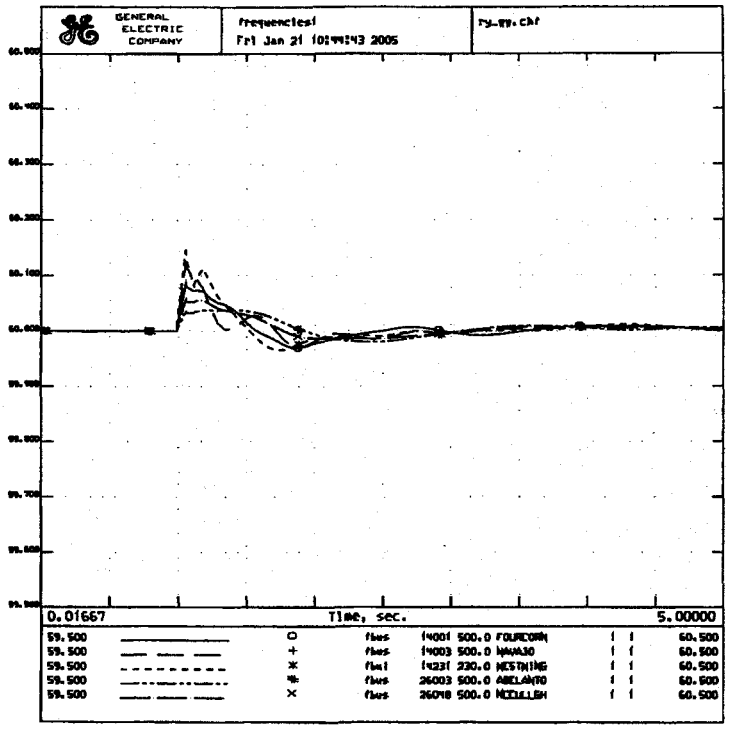
RACEWAY FLT. RY-TSS line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-TSS STAB; 1/05; T=0 3P FLT RYS00;FLSH CAPS NK-YP/YP-NM,
NV-NK/NM#C CLR FLT N/RY-TSS;BC REIN;2014.dyd NSCC.bat

2014 Case for 10-Year Plan Stability



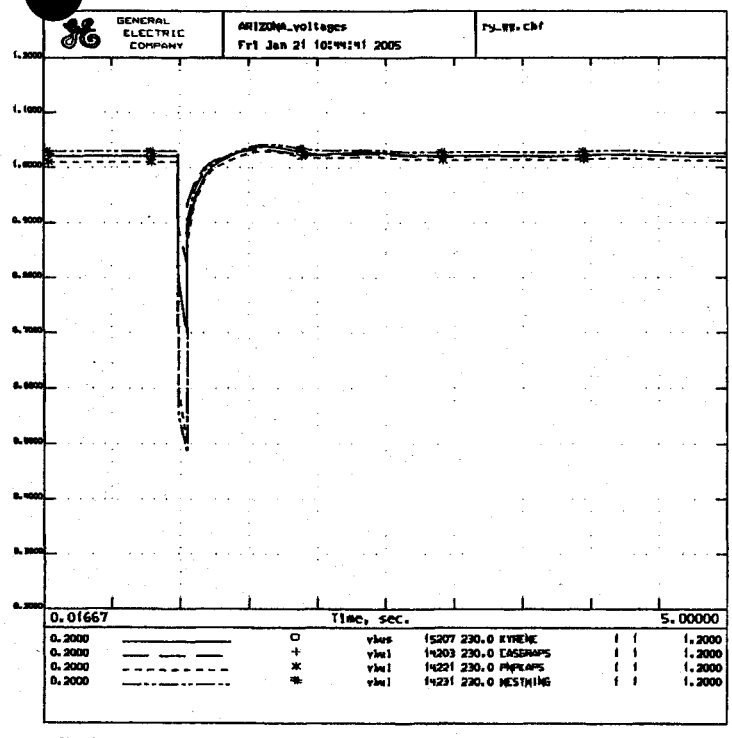
RACEWAY FLT. RY-MW line out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-MW STAB; 1/05; T=0 3P FLT RYSOO;FLSH CAPS MW-YP/YP-MW,
MV-MW/MW4C CLR FLT M/RY-MW8C REI;2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



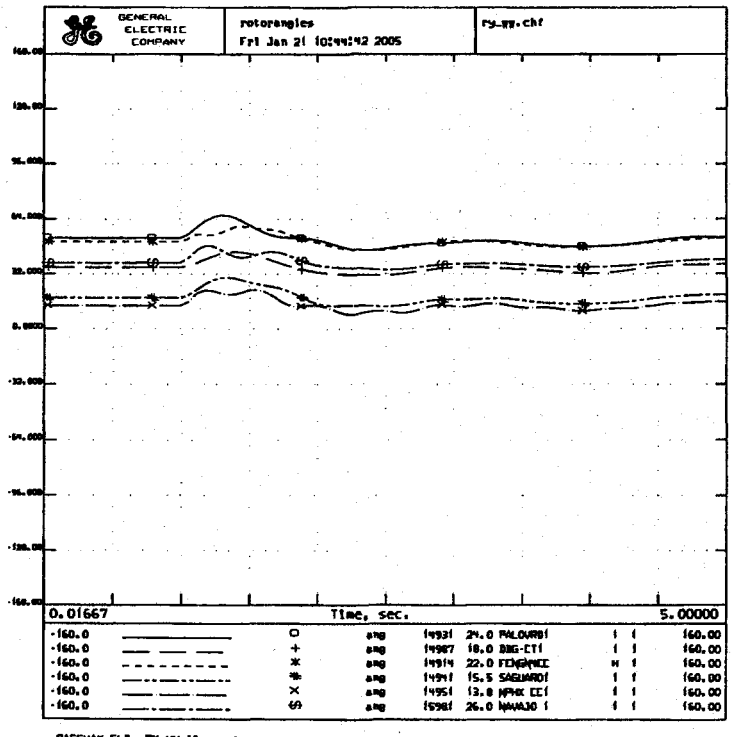
RACEWAY FLT. RY-MW line out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-MW STAB; 1/05; T=0 3P FLT RYSOO;FLSH CAPS MW-YP/YP-MW,
MV-MW/MW4C CLR FLT M/RY-MW8C REI;2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



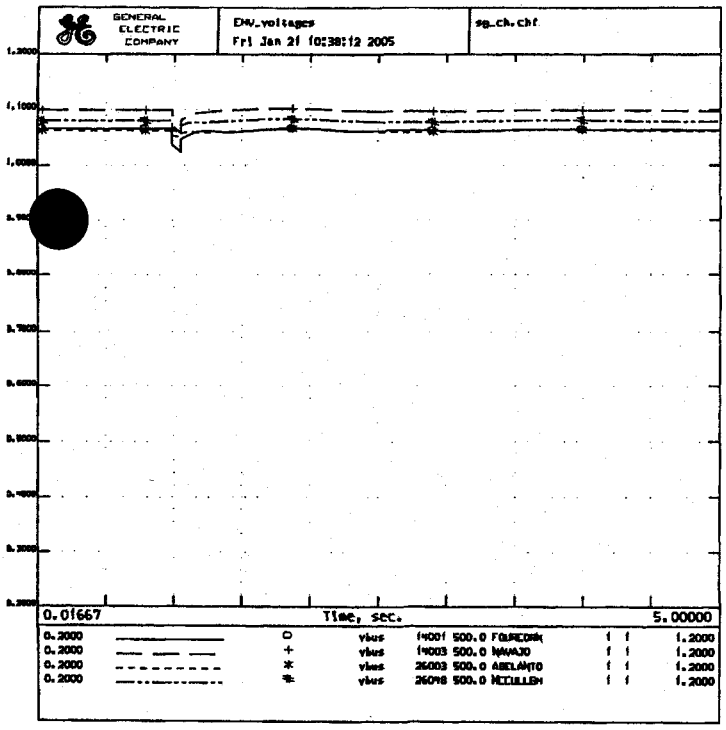
RACEWAY FLT. RY-MW line out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-MW STAB; 1/05; T=0 3P FLT RYSOO;FLSH CAPS MW-YP/YP-MW,
MV-MW/MW4C CLR FLT M/RY-MW8C REI;2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



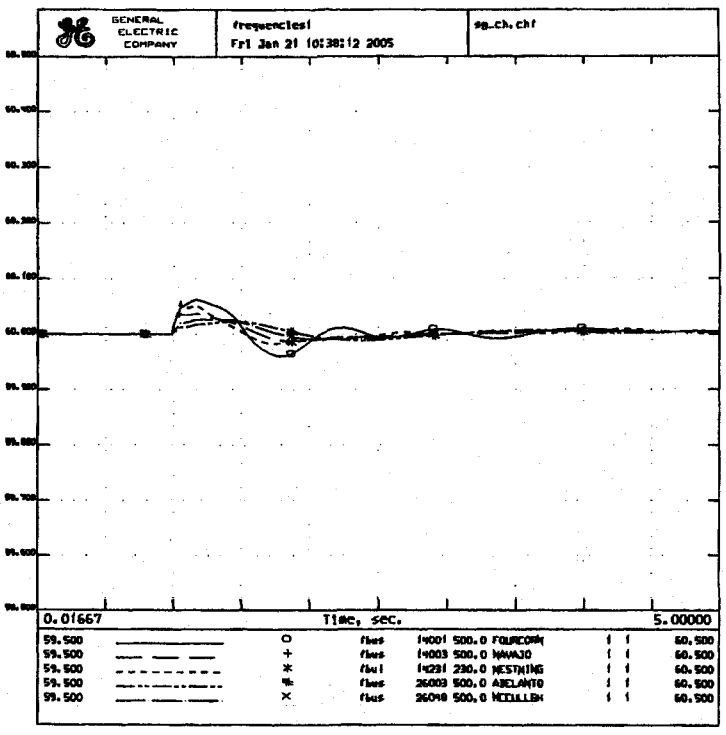
RACEWAY FLT. RY-MW line out
2014 MSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RY-MW STAB; 1/05; T=0 3P FLT RYSOO;FLSH CAPS MW-YP/YP-MW,
MV-MW/MW4C CLR FLT M/RY-MW8C REI;2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



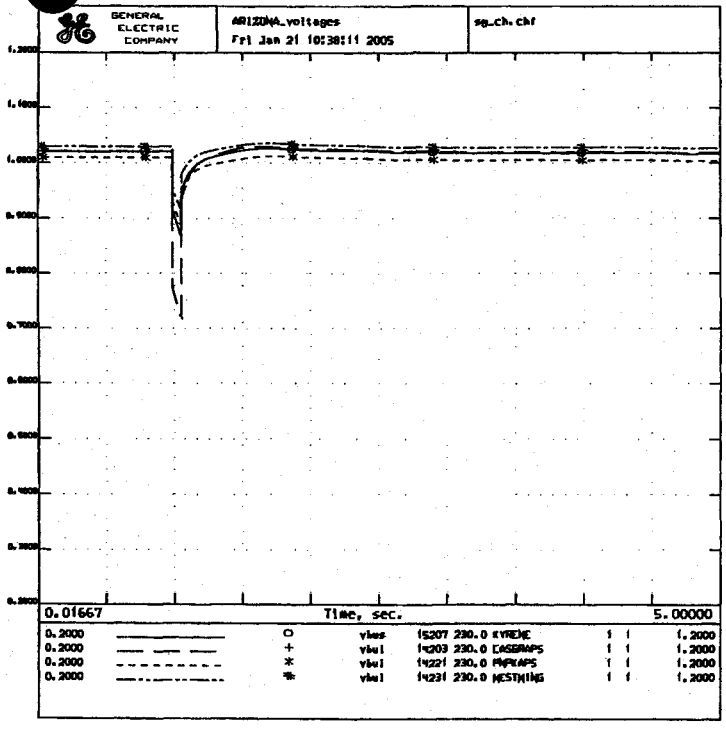
SAGUARO FLT SG-CH LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
SG-CH STAB: 01/05; T=0 3P FLT SG500;
MC CLR FLT W/SG-CH;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



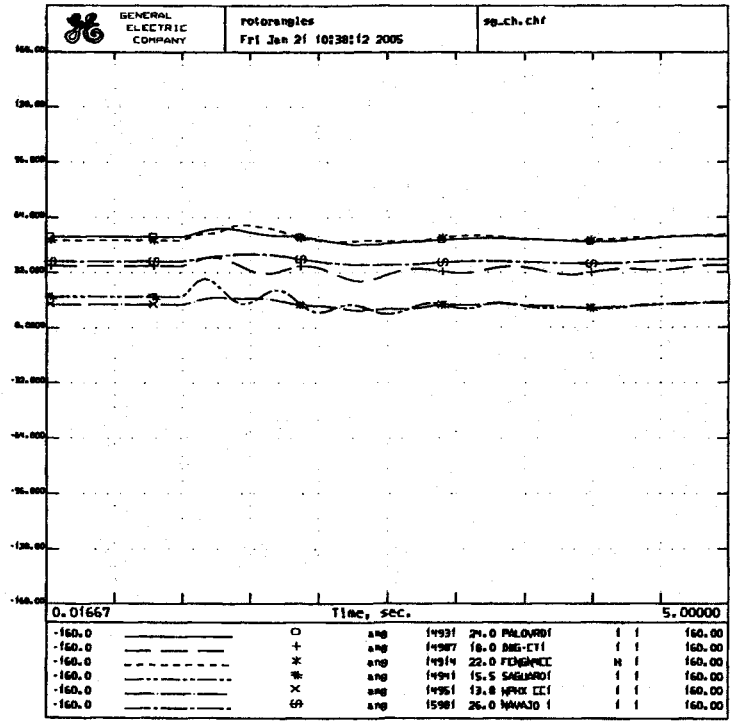
SAGUARO FLT SG-CH LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
SG-CH STAB: 01/05; T=0 3P FLT SG500;
MC CLR FLT W/SG-CH;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



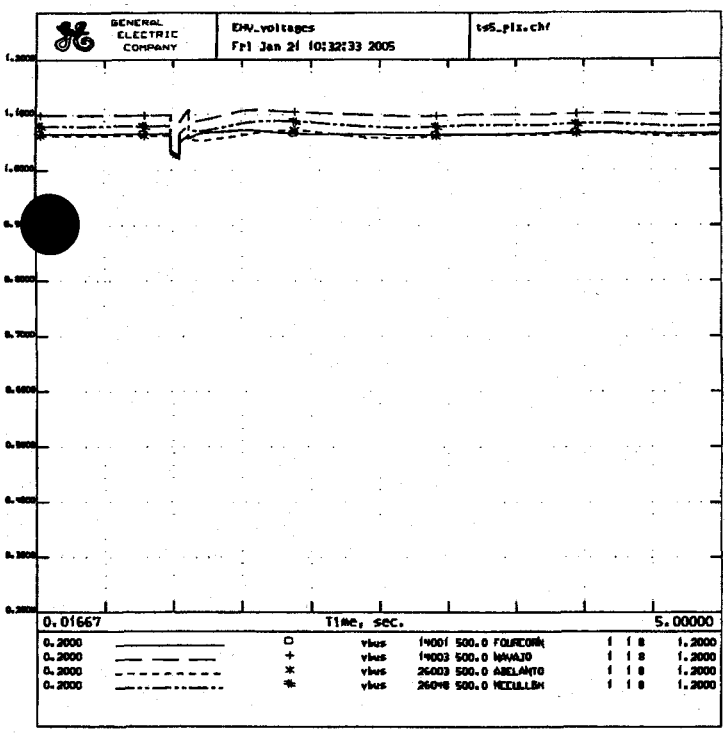
SAGUARO FLT SG-CH LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
[illegible] STAB: 01/05; T=0 3P FLT SG500;
[illegible] FLT W/SG-CH;2014.dyd;MSCC.bpt

[illegible] Case for 10-Year Plan Stability



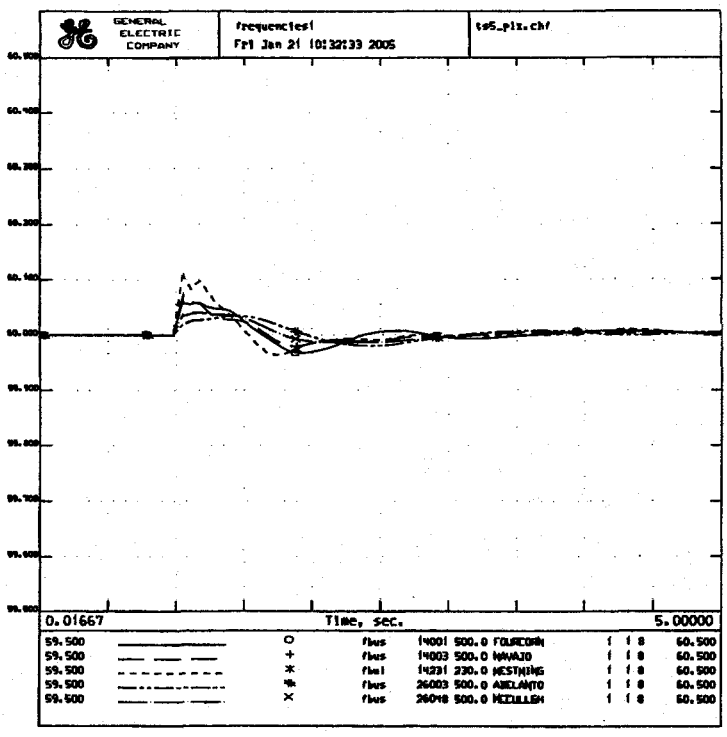
SAGUARO FLT SG-CH LINE OUT
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
SG-CH STAB: 01/05; T=0 3P FLT SG500;
MC CLR FLT W/SG-CH;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



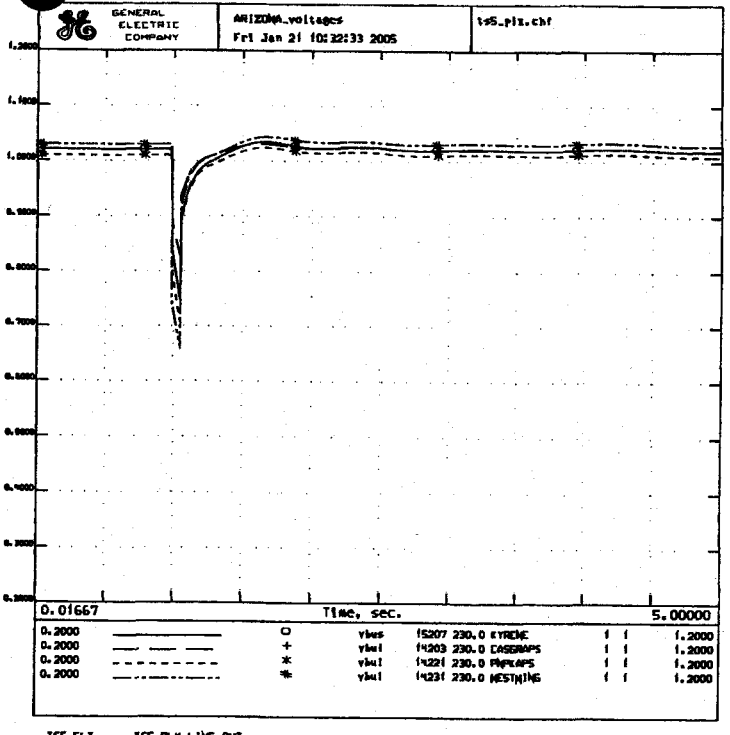
TSS FLT TSS-PLX LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
TSS-PLX STAB; 01/05; T+0 3P FLT TSS500; 10% FLT DMPING; FLSH CAPS
MW-MX/MX-YV,PLX-DEX/MG;4C CLR FLT M/TSS-PLX;8C REIN;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



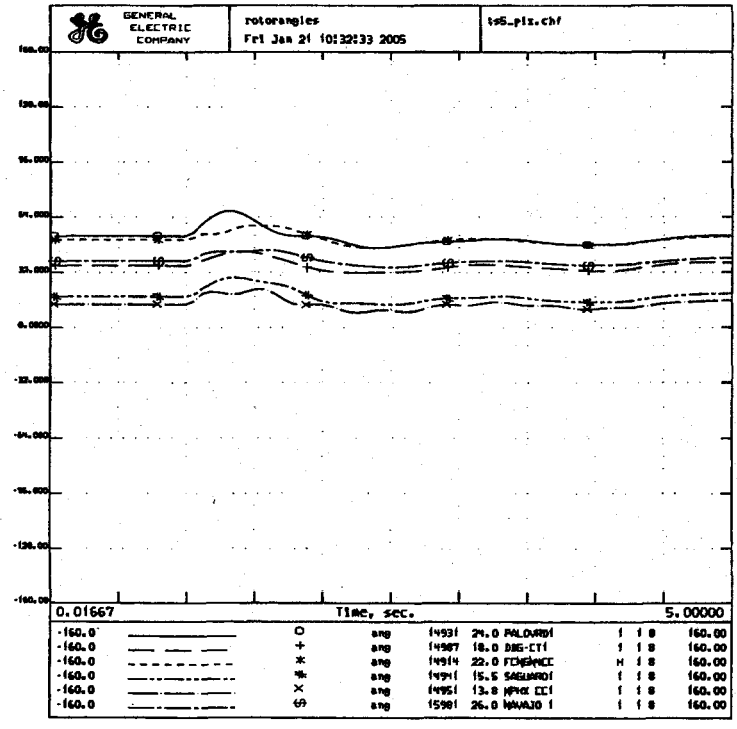
TSS FLT TSS-PLX LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
TSS-PLX STAB; 01/05; T+0 3P FLT TSS500; 10% FLT DMPING; FLSH CAPS
MW-MX/MX-YV,PLX-DEX/MG;4C CLR FLT M/TSS-PLX;8C REIN;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



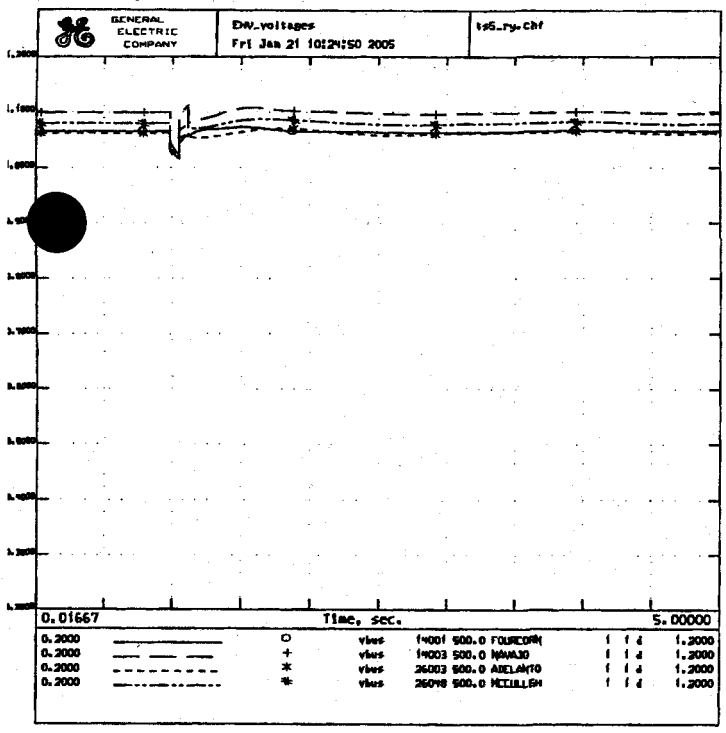
TSS FLT TSS-PLX LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX STAB; 01/05; T+0 3P FLT TSS500; 10% FLT DMPING; FLSH CAPS
X/MX-YV,PLX-DEX/MG;4C CLR FLT M/TSS-PLX;8C REIN;2014.dyd;MSCC.bpt

4 Case for 10-Year Plan Stability



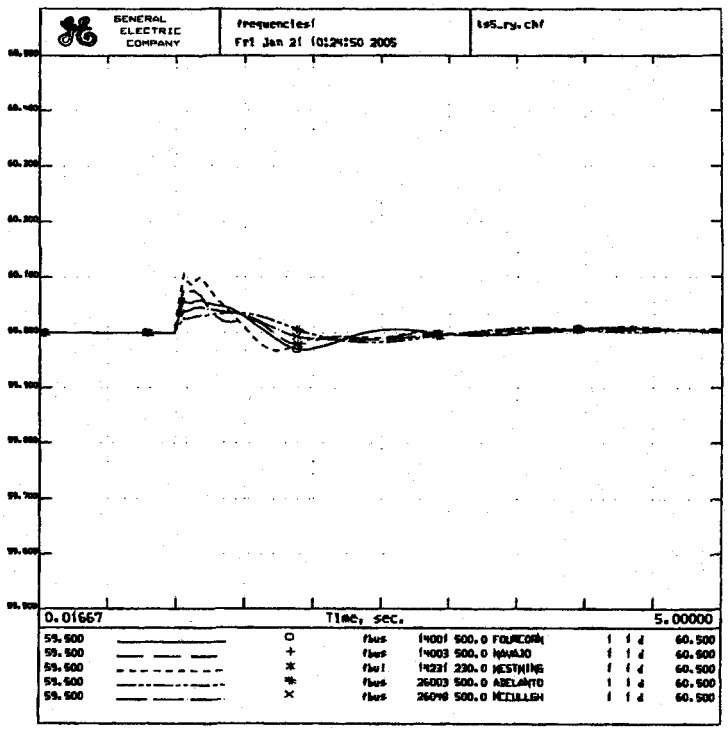
TSS FLT TSS-PLX LINE OUT
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
TSS-PLX STAB; 01/05; T+0 3P FLT TSS500; 10% FLT DMPING; FLSH CAPS
MW-MX/MX-YV,PLX-DEX/MG;4C CLR FLT M/TSS-PLX;8C REIN;2014.dyd;MSCC.bpt

2014 Case for 10-Year Plan Stability



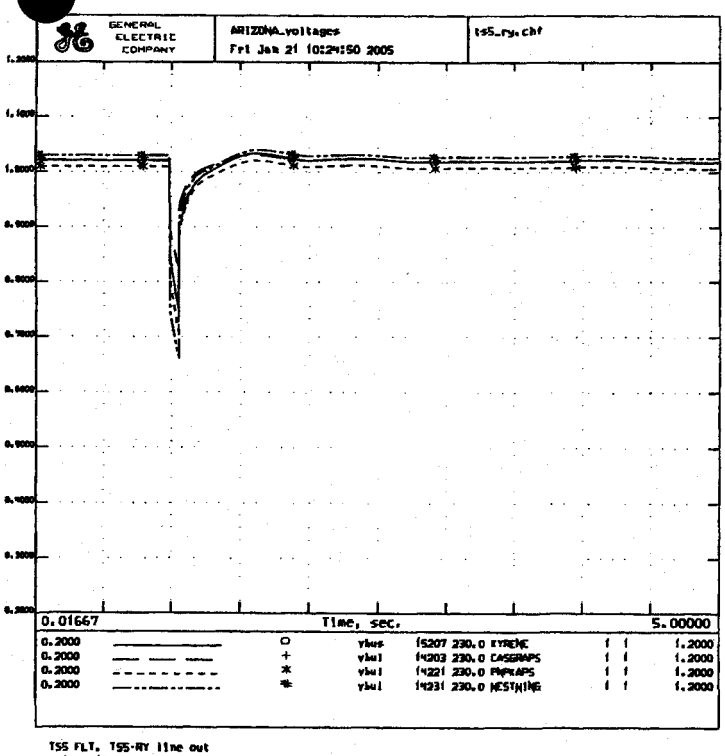
TSS FLT, TSS-RY line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
TSS-RY STAB; 1/05; T=0 3P FLT TSS500;FLSH CAPS NK-YV/YV-NM,
NV-NK/NM;4C CLR FLT W/TSS-RY;BC RE[N;2014.dyd NSCC.bat

2014 Case for 10-Year Plan Stability



TSS FLT, TSS-RY line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
TSS-RY STAB; 1/05; T=0 3P FLT TSS500;FLSH CAPS NK-YV/YV-NM,
NV-NK/NM;4C CLR FLT W/TSS-RY;BC RE[N;2014.dyd NSCC.bat

2014 Case for 10-Year Plan Stability



TSS FLT, TSS-RY line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
RY STAB; 1/05; T=0 3P FLT TSS500;FLSH CAPS NK-YV/YV-NM,
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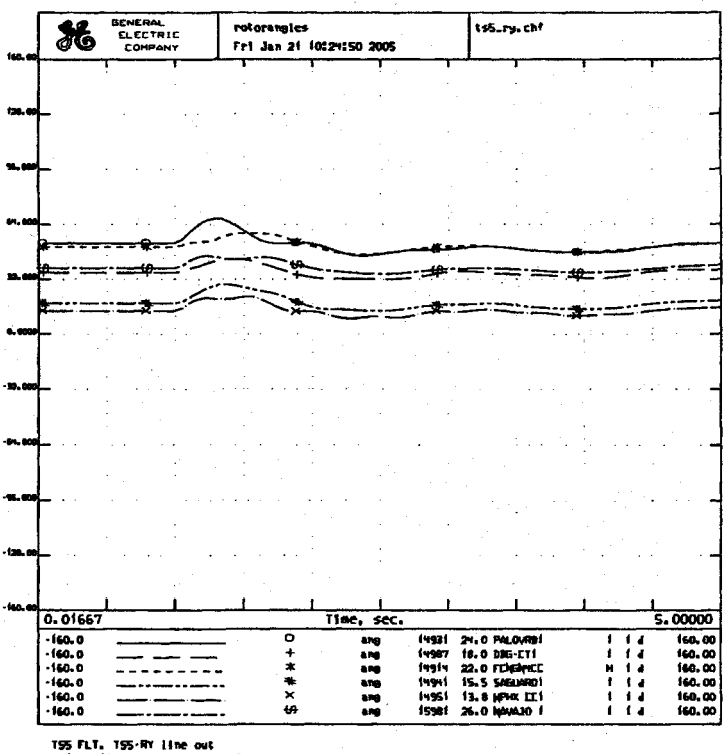
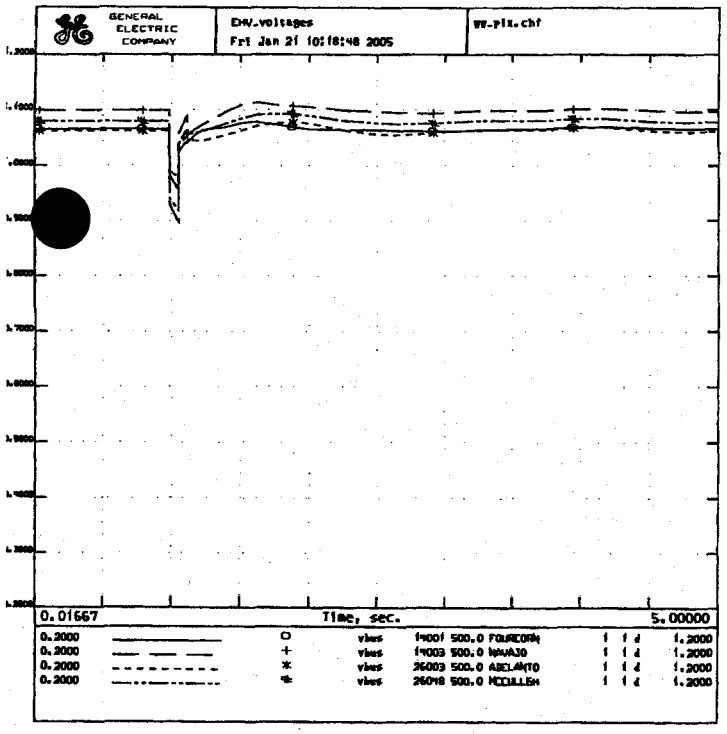
Case for 10-Year Plan Stability



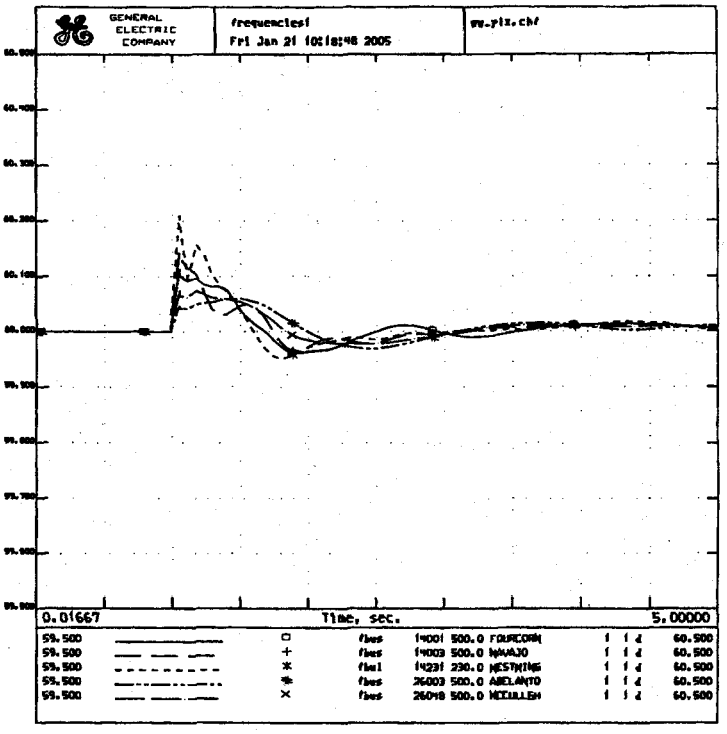
TSS FLT, TSS-RY line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
TSS-RY STAB; 1/05; T=0 3P FLT TSS500;FLSH CAPS NK-YV/YV-NM,
NV-NK/NM;4C CLR FLT W/TSS-RY;BC RE[N;2014.dyd NSCC.bat

2014 Case for 10-Year Plan Stability



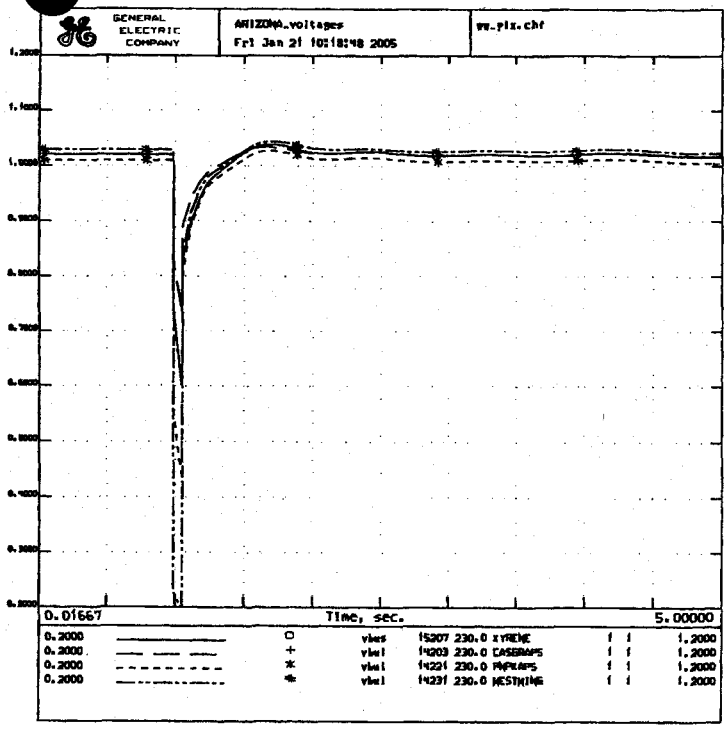
WESTWING FLT. NM-PLX line out
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-PLX STAB: 1/05: T=0 3P FLT NM500:FLSH CAPS NM-YP/YP-NM.
NV-NM/NM4C CLR FLT N/NM-PLX:BC RE1N:2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



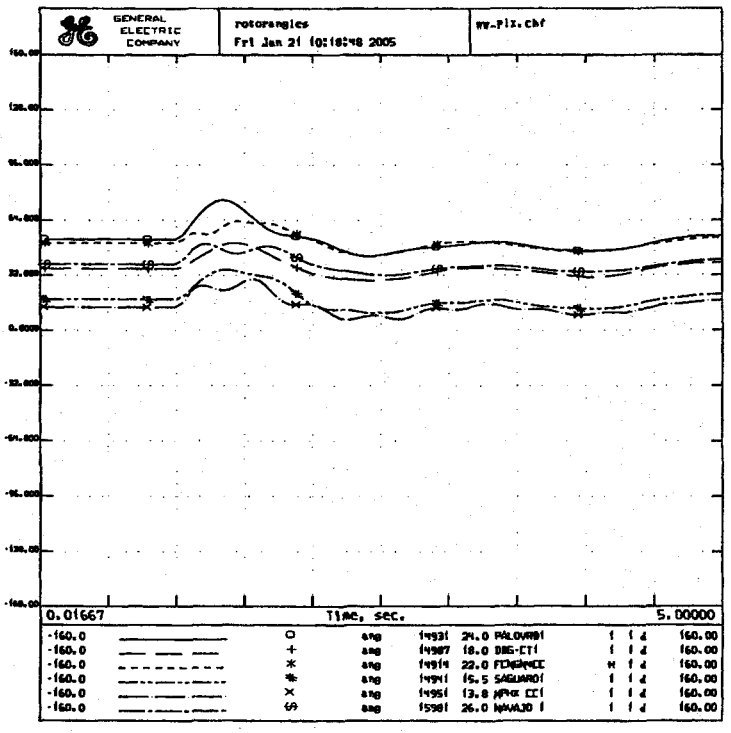
WESTWING FLT. NM-PLX line out
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-PLX STAB: 1/05: T=0 3P FLT NM500:FLSH CAPS NM-YP/YP-NM.
NV-NM/NM4C CLR FLT N/NM-PLX:BC RE1N:2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



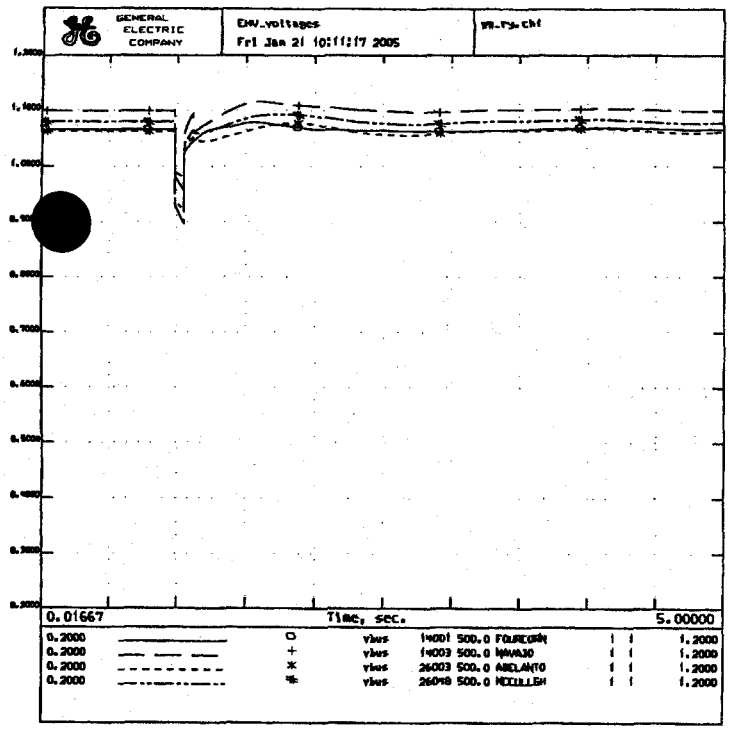
WESTWING FLT. NM-PLX line out
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
PLX STAB: 1/05: T=0 3P FLT NM500:FLSH CAPS NM-YP/YP-NM.
/NM4C CLR FLT N/NM-PLX:BC RE1N:2014.dyd WSCC.bat

Case for 10-Year Plan Stability



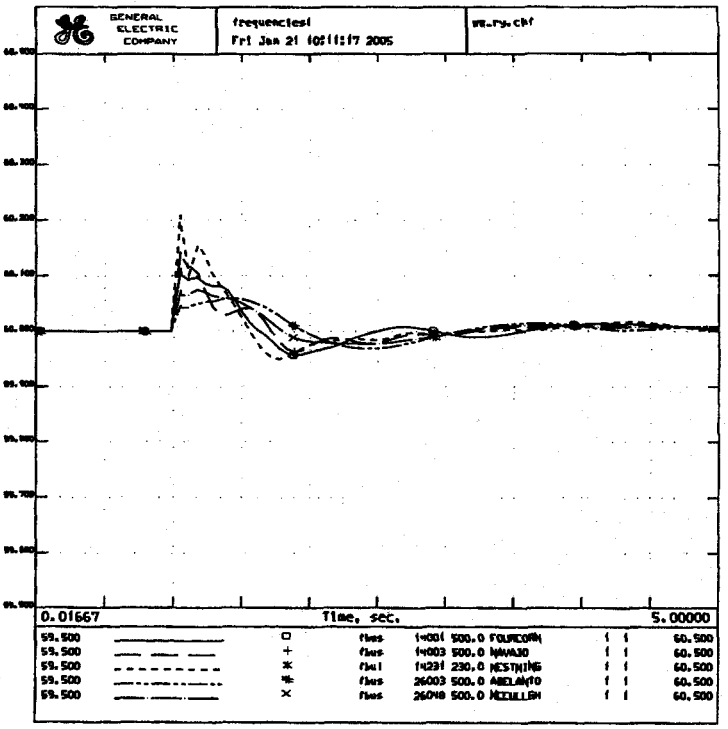
WESTWING FLT. NM-PLX line out
2014 WSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-PLX STAB: 1/05: T=0 3P FLT NM500:FLSH CAPS NM-YP/YP-NM.
NV-NM/NM4C CLR FLT N/NM-PLX:BC RE1N:2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



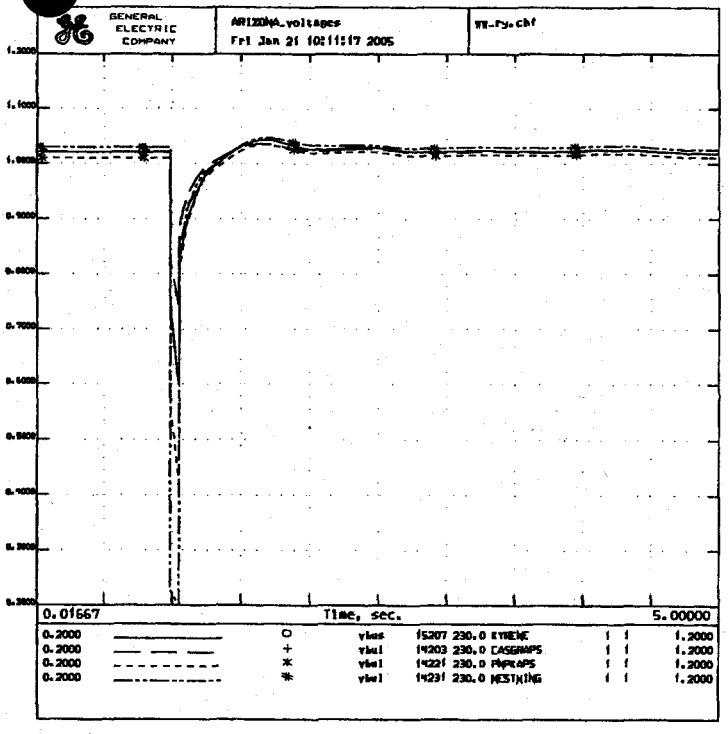
WESTWING FLT. NM-RY line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-RY STAB; 1/05; T+0 3P FLT NM500;FLSH CAPS NM-YP/YP-NM.
NV-MC/NM+C CLR FLT N/NM-RY;BC REIN;2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



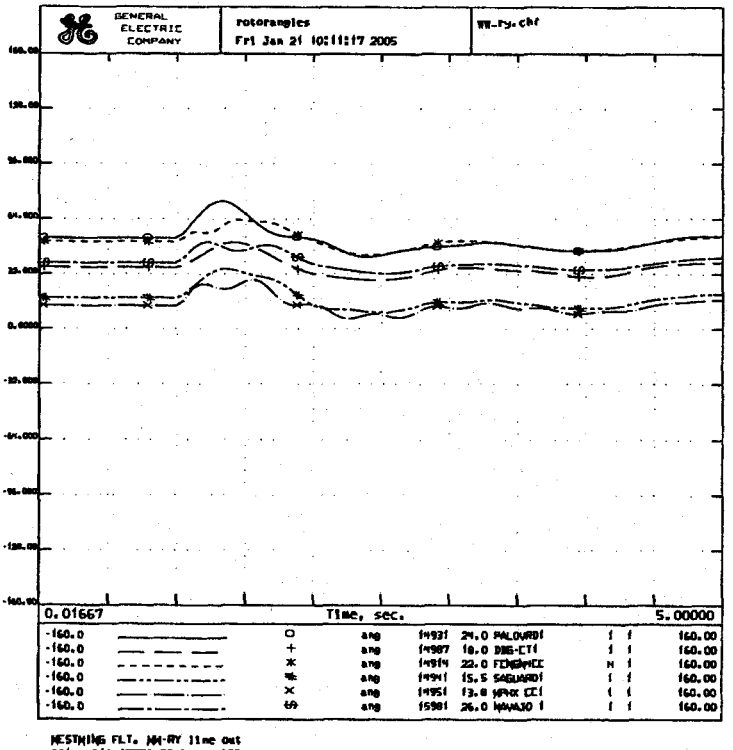
WESTWING FLT. NM-RY line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-RY STAB; 1/05; T+0 3P FLT NM500;FLSH CAPS NM-YP/YP-NM.
NV-MC/NM+C CLR FLT N/NM-RY;BC REIN;2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



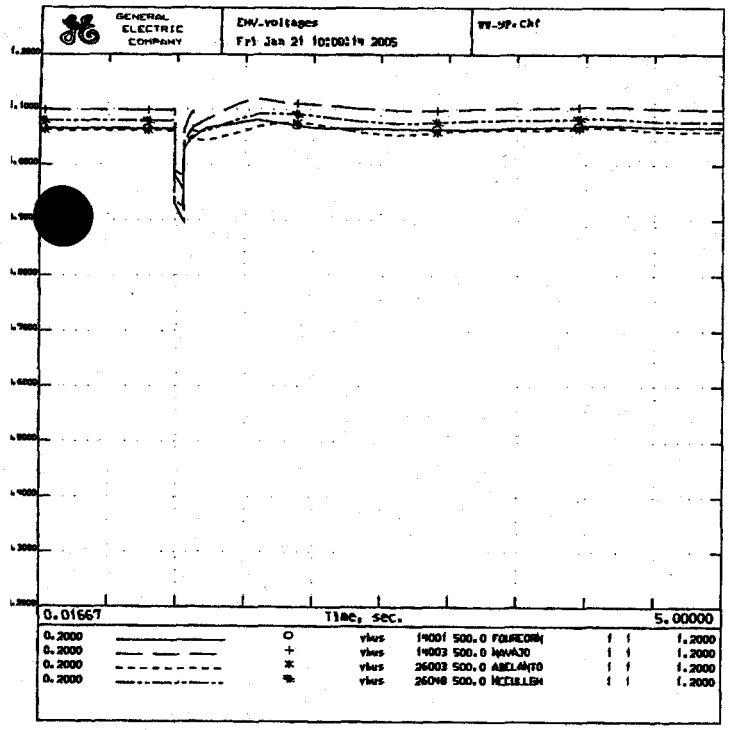
WESTWING FLT. NM-RY line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
[redacted] STAB; 1/05; T+0 3P FLT NM500;FLSH CAPS NM-YP/YP-NM.
[redacted]/NM+C CLR FLT N/NM-RY;BC REIN;2014.dyd WSCC.bat

[redacted] Case for 10-Year Plan Stability



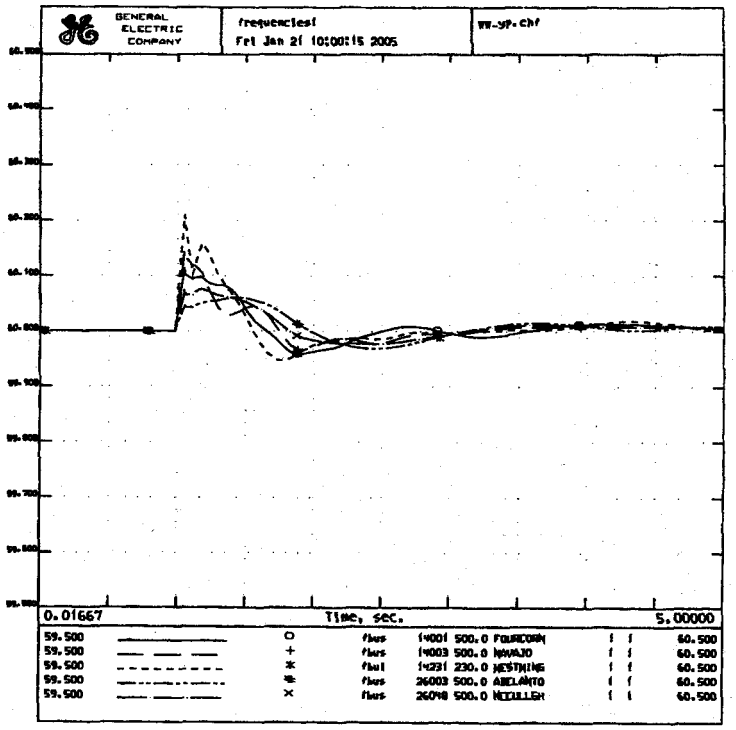
WESTWING FLT. NM-RY line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-RY STAB; 1/05; T+0 3P FLT NM500;FLSH CAPS NM-YP/YP-NM.
NV-MC/NM+C CLR FLT N/NM-RY;BC REIN;2014.dyd WSCC.bat

2014 Case for 10-Year Plan Stability



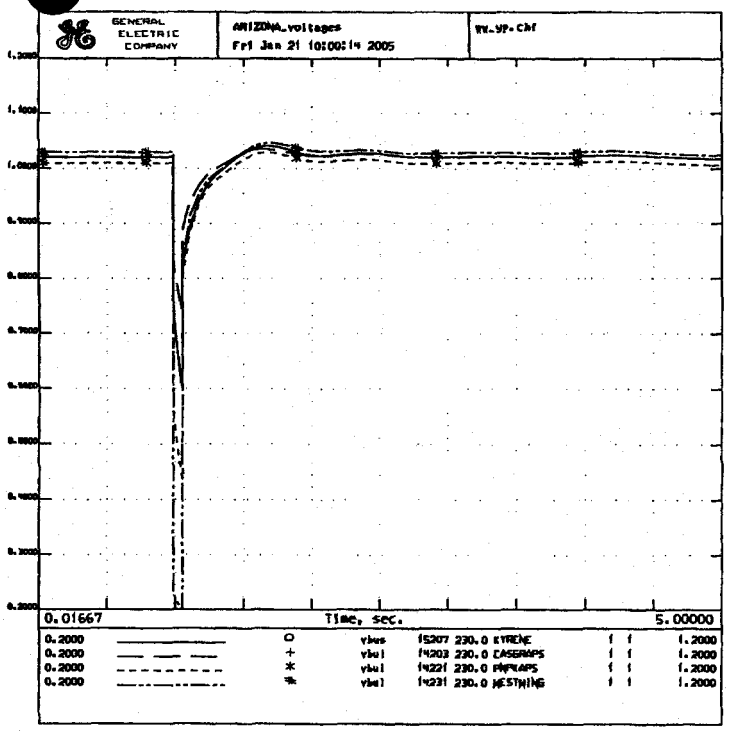
NESTNING FLT. NM-YP line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-YP STAB; 1/05; T=0 3P FLT NW500;FLSH CAPS NK-YP/YP-NM,
NV-NK/NM;4C CLR FLT N/NM-YP;8C REIN;2014.dyd HSCC.bat

2014 Case for 10-Year Plan Stability



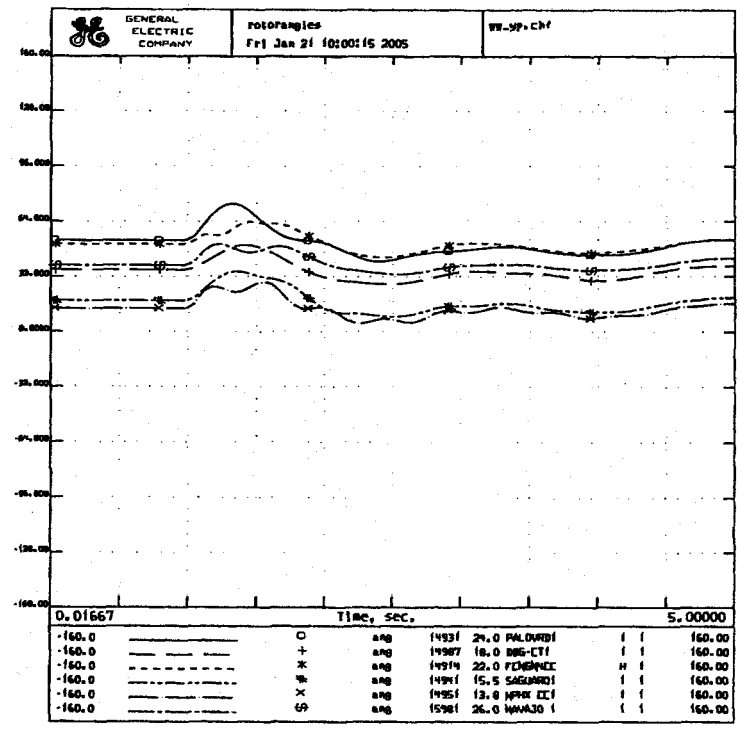
NESTNING FLT. NM-YP line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-YP STAB; 1/05; T=0 3P FLT NW500;FLSH CAPS NK-YP/YP-NM,
NV-NK/NM;4C CLR FLT N/NM-YP;8C REIN;2014.dyd HSCC.bat

2014 Case for 10-Year Plan Stability



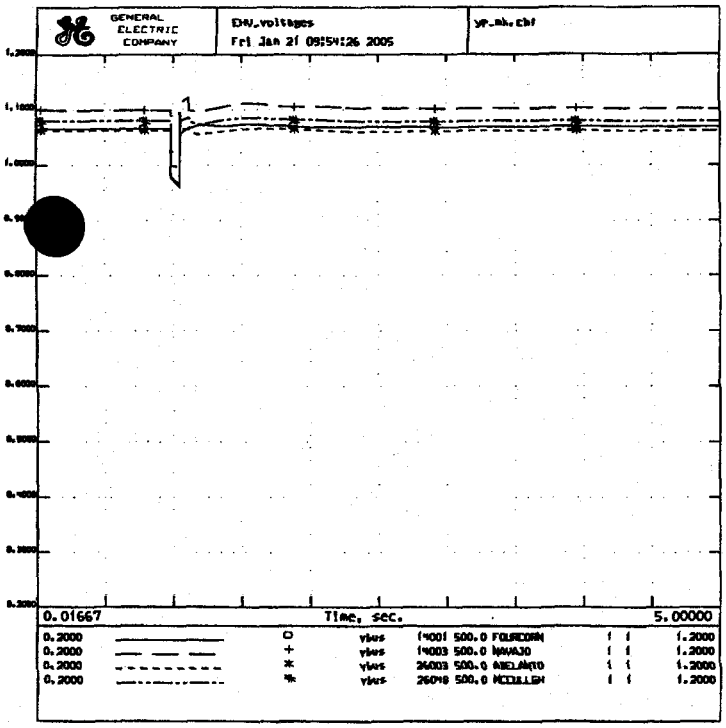
NESTNING FLT. NM-YP line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-YP STAB; 1/05; T=0 3P FLT NW500;FLSH CAPS NK-YP/YP-NM,
NV-NK/NM;4C CLR FLT N/NM-YP;8C REIN;2014.dyd HSCC.bat

2014 Case for 10-Year Plan Stability



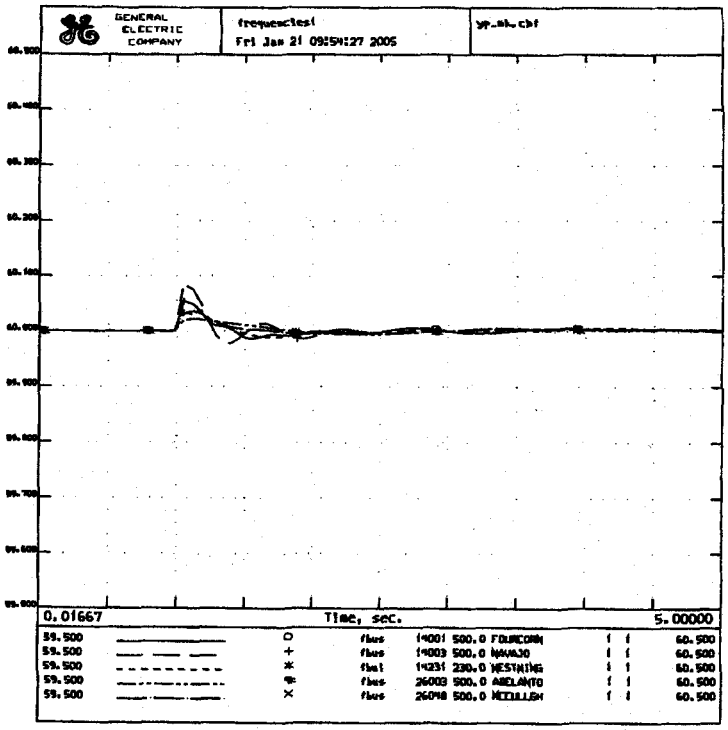
NESTNING FLT. NM-YP line out
2014 HSIA APPROVED BASE CASE
SEPTEMBER 21, 2004
NM-YP STAB; 1/05; T=0 3P FLT NW500;FLSH CAPS NK-YP/YP-NM,
NV-NK/NM;4C CLR FLT N/NM-YP;8C REIN;2014.dyd HSCC.bat

2014 Case for 10-Year Plan Stability



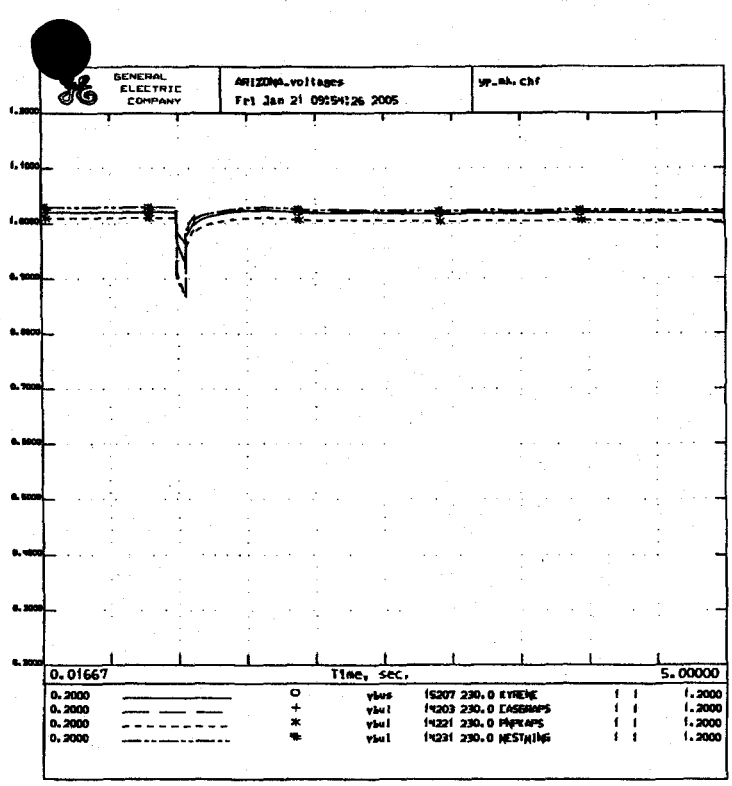
YAVAPAI FLT. YP-MK line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
YP STAB; 1/05; T=0 3P FLT YP500;FLSH CAPS MK-YP/YP-MH,
MV-MK/MH;NC CLR FLT W/YP-MK;BC RE1N;2014.dyd HSCC.bat

2014 Case for 10-Year Plan Stability



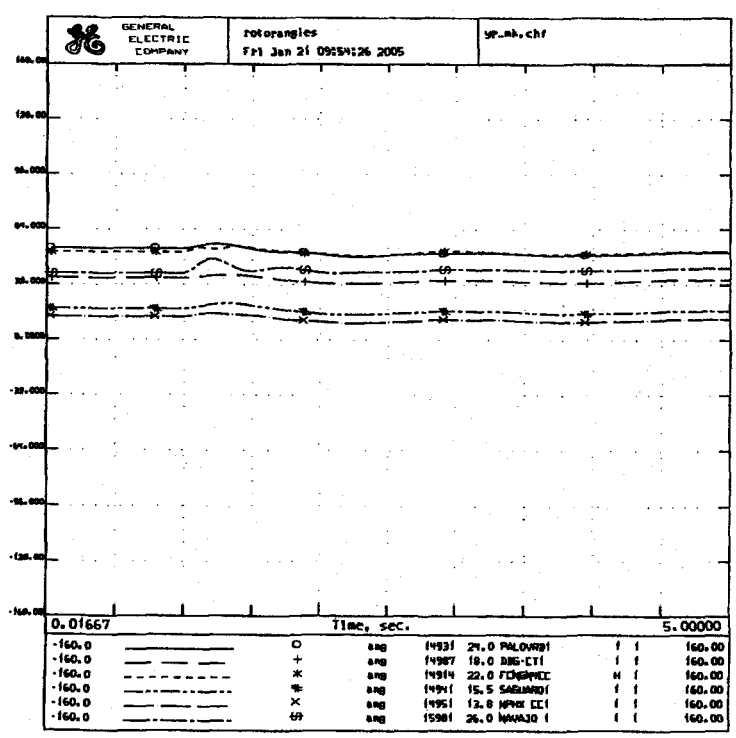
YAVAPAI FLT. YP-MK line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
YP STAB; 1/05; T=0 3P FLT YP500;FLSH CAPS MK-YP/YP-MH,
MV-MK/MH;NC CLR FLT W/YP-MK;BC RE1N;2014.dyd HSCC.bat

2014 Case for 10-Year Plan Stability



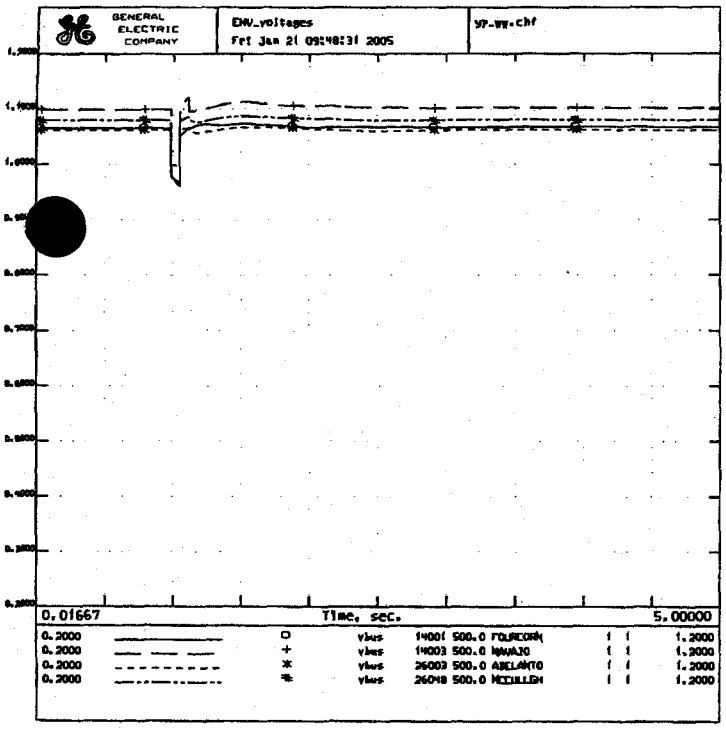
YAVAPAI FLT. YP-MK line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
STAB; 1/05; T=0 3P FLT YP500;FLSH CAPS MK-YP/YP-MH,
MH;NC CLR FLT W/YP-MK;BC RE1N;2014.dyd HSCC.bat

Case for 10-Year Plan Stability



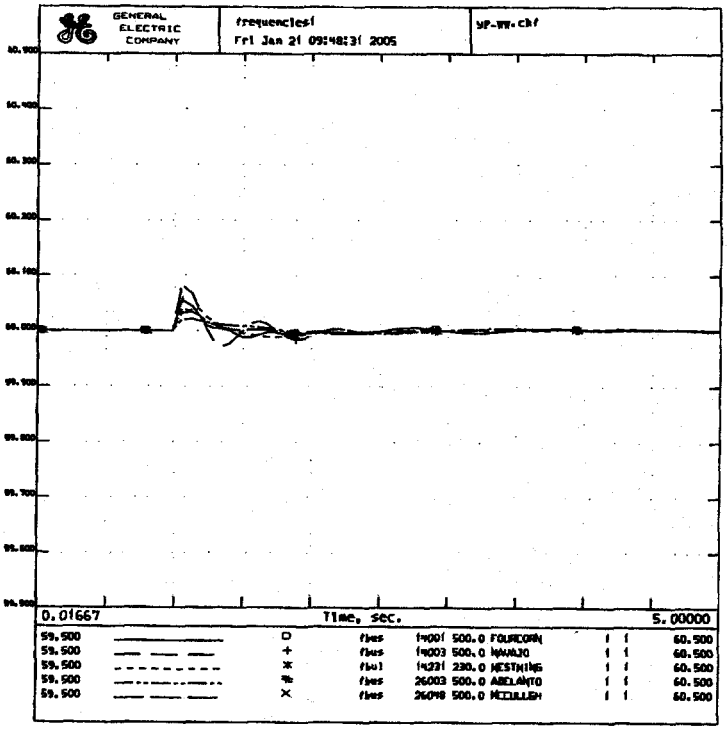
YAVAPAI FLT. YP-MK line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
YP STAB; 1/05; T=0 3P FLT YP500;FLSH CAPS MK-YP/YP-MH,
MV-MK/MH;NC CLR FLT W/YP-MK;BC RE1N;2014.dyd HSCC.bat

2014 Case for 10-Year Plan Stability



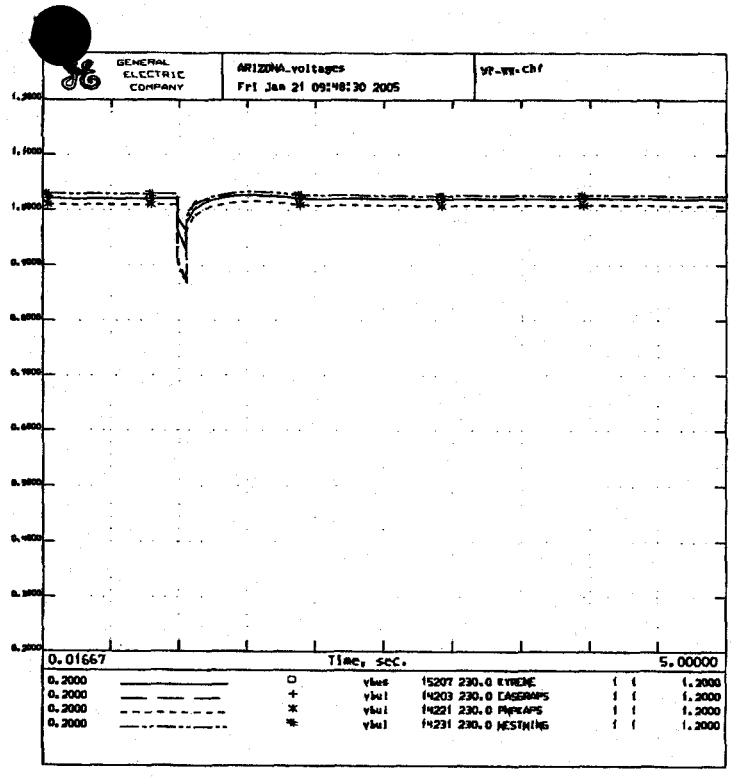
YAVAPAI FLT. YP-MH line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
YP STAB: 1/0S: T+0 3P FLT YP500:FLSH CAPS MX-YP/YP-MH,
MV-MX/MH:MC CLR FLT M/YP-MH:BC RE:N:2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



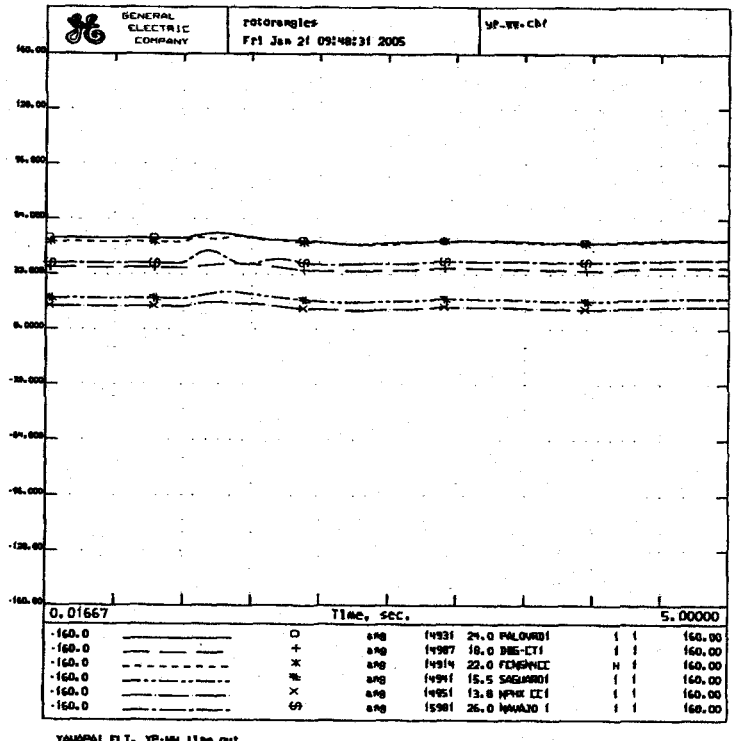
YAVAPAI FLT. YP-MH line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
YP STAB: 1/0S: T+0 3P FLT YP500:FLSH CAPS MX-YP/YP-MH,
MV-MX/MH:MC CLR FLT M/YP-MH:BC RE:N:2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



YAVAPAI FLT. YP-MH line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
YP STAB: 1/0S: T+0 3P FLT YP500:FLSH CAPS MX-YP/YP-MH,
MV-MX/MH:MC CLR FLT M/YP-MH:BC RE:N:2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability



YAVAPAI FLT. YP-MH line out
2014 HS1A APPROVED BASE CASE
SEPTEMBER 21, 2004
YP STAB: 1/0S: T+0 3P FLT YP500:FLSH CAPS MX-YP/YP-MH,
MV-MX/MH:MC CLR FLT M/YP-MH:BC RE:N:2014.dyd MSCC.bat

2014 Case for 10-Year Plan Stability