

APPENDIX 5A

System Impact Study, Transmission Systems

EDISON MISSION ENERGY
SUN VALLEY GENERATING FACILITY
SYSTEM IMPACT STUDY

September 22, 2005



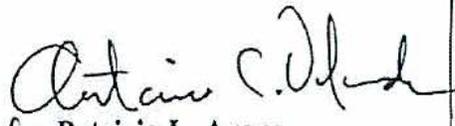
SOUTHERN CALIFORNIA
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EXECUTIVE SUMMARY

INTRODUCTION

Edison Mission Energy (“EME”) applied to Southern California Edison (“SCE”) for Distribution Service under the terms of SCE’s Wholesale Distribution Access Tariff (“WDAT”). EME proposed to interconnect a 507.5 MW generation project, the Sun Valley Generating Facility (“Project”), in Riverside County near Romoland, California. The Project consists of five simple-cycle Hitachi GH1550A generators with a net output each of 101.5 MW. EME proposes to connect to the 115 kV South bus at SCE’s Valley Substation. The in-service date proposed by EME is September 1, 2007.

SCE has performed a System Impact Study to determine the adequacy of SCE’s transmission system to accommodate the Project. The study indicated that the system is not adequate to accommodate the 507.5 MW of generation without modifications. A Facilities Study will be required for the Project.

The results of the System Impact Study will be used as the basis to determine project cost allocation for facility upgrades in the Facilities Study. *The study accuracy and the results for the assessment of the system adequacy are contingent on the accuracy of the technical data provided by EME.* Any changes from the attached data could void the study results. SCE’s Field Engineering department has performed a System Impact Study on the SCE affected distribution network.

STUDY RESULTS

The study results show that the existing system is not adequate to accommodate the Project without upgrades.

A. Power Flow Study Conclusions

The power flow study results show that overload problems were found on several transmission lines for base-case, N-1 and N-2 contingencies. Specifically:

Base Case

Under Peak Load conditions, there was no base case overload identified.

Under Off-Peak Load conditions, one pre-project base case overload problem was exacerbated by the addition of the Project. The power flow of Serrano-Valley 500 kV increased from 101% to 113%.

Single Contingencies

Under Peak Load conditions, there was one single contingency which exacerbates the overloading problems triggered by projects ahead of the Project. The overloaded line is Etiwanda-San Bernardino 230 kV line. The power flow increased from 125% to 129%.

Under Off-Peak Load conditions, there were ten single contingencies which trigger or exacerbate the overloading problems on seven transmission lines. With the addition of the Project, the post-contingency loadings range from 102% to 146%. The loading increase ranges from 3% to 13%.

Double Contingencies

Under Peak Load conditions, there were two double contingencies which exacerbate the overloading problems triggered by projects ahead of the Project. The overloaded line is Etiwanda-San Bernardino 230 kV line. The power flow increased from 143% to 147%.

Under Off-Peak Load conditions, there were twenty-four double contingencies which trigger or exacerbate the overloading problems on eight transmission lines. With the addition of the Project, the post-contingency loadings range from 108% to 148%. The loading increase ranges from 2% to 13%.

B. Post-Transient Voltage Stability Study Conclusions

There was no problem identified on post-transient voltage stability by the addition of the Project.

C. Transient Stability Study Conclusions

There were no problems identified on transient stability response to system contingencies by the addition of the Project.

D. Short Circuit Study Conclusions

The study results indicated that the Project increases three-phase short-circuit duties at 22 bulk power substations by 0.1kA or more. The Project triggers the need to replace two 38.4kA 500 kV CBs at Mira Loma Substation.

SCOPE OF WORK

The scope of the upgrades required to accommodate the Project is listed below. These upgrades are required to be in-service by the proposed interconnection/testing date on September 1, 2007.

1. Install two new Double-Breaker 115 kV Line Positions at Valley Substation to terminate the two new 115 kV Generation Tie Lines.
Total Cost = [REDACTED] The cost breakdown is below:
 - [REDACTED] for System Upgrades (not subject to ITCC tax)
 - [REDACTED] for Interconnection Facilities (not including tax liability security)
2. Install one Remote Terminal Unit (RTU) at Valley Substation.
Total Cost = [REDACTED] (not including tax liability security)

3. Install a Special Protection Scheme (SPS) for mitigation of the overloads on Devers-Vista No.1 and No.2 230 kV lines for the N-1 contingency of Serrano-Valley 500 kV line. For a summary of the generation curtailment requirements, see Table 8-1. Total Cost = [REDACTED]. The cost breakdown is below:
 - Install SPS relays at Serrano, Valley, Devers and Vista substations for a cost of [REDACTED] at each station (not subject to ITCC tax)
 - [REDACTED] for IT equipment (not subject to ITCC tax)
4. Replace the two 38.4kA 500 kV CBs at Mira Loma Substation with 40kA units. Total Cost = [REDACTED] (not subject to ITCC tax)

Notes: There are other 230kV and 500kV circuit breakers that would need to be replaced or upgraded. The cost allocations are currently assigned to other projects ahead of the Project in the queue.

5. There are other transmission upgrades to fix the overloads triggered by the projects in queue ahead of the Project. These upgrades will accommodate the Sun Valley Generating Facility along with all the projects ahead of the Project. The costs of these upgrades are not allocated to the Project. These upgrades include the following:
 - a. Overload on the Serrano-Valley 500 kV T/L: Replace 3000A GIS Air-to-Gas Bushings with 4000A at both Serrano and Valley line terminations.
 - b. Overload on the Etiwanda-San Bernardino 230 kV T/L: Replace two 1200A Disconnect Switches at Etiwanda with a higher rating of 2000A.
 - c. Overload on the Etiwanda-Vista 230 kV T/L: Replace 2000A Wave Trap at Etiwanda with a higher rating of 3000A.
 - d. Overload on the Mira Loma-Walnut 230 kV T/L: Remove the 2000A Wave Trap at Etiwanda.
6. The following overloads are caused by insufficient generation dispatch in South Orange County during Off-Peak load conditions. These overloading problems need to be addressed by committing RMR generation or by the SCE Annual Transmission Expansion Planning Process. These overloads are:
 - a. Overload on the Barre-Lewis 230 kV T/L
 - b. Overload on the Barre-Ellis 230 kV T/L
 - c. Overload on the Lewis-Villa Park 230 kV T/L

Notes: Study results may be affected by changes in other projects ahead of the queue in the area. A re-study may be required if there are changes in the project queue or the scope of projects ahead in the queue. All cost estimates are rough order of magnitude, and are non binding cost estimates.

In addition, an operational study is required to identify which upgrades need to be completed by the proposed operating date of the Sun Valley Generating Project.

COST ESTIMATE

The *Nonbinding* Cost Estimates associated with upgrading the identified facilities is [REDACTED] dollars, excluding ITCC. See the following table for itemized cost.

Item	Direct Assignments	Network Upgrades	TOTAL
Generation Tie Lines	[REDACTED]	[REDACTED]	[REDACTED]
Communications Equipment	[REDACTED]	[REDACTED]	[REDACTED]
Short Circuit Duty Mitigation	[REDACTED]	[REDACTED]	[REDACTED]
Transmission Overload Mitigation	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]

CONSTRUCTION SCHEDULE

ELEMENT	START	END	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15
PROJECT APPROVAL	Initiate Work Orders																
VALLEY SUB.	Two New 115KV Line Positions																
Engineering & Design	Start of Mo.2	Start of Mo.6															
Major Equipment Procure & Deliver	Start of Mo.4	Start of Mo.10															
Construction	Start of Mo.8	Start of Mo.14															
Testing	Start of Mo.15	End of Mo.15															
MIRA LOMA SUB	Replace two 500KV CB's																
Engineering & Design	Start of Mo.2	Start of Mo.6															
Major Equipment Procure & Deliver	Start of Mo.4	Start of Mo.10															
Construction	Middle of Mo.8	Middle of Mo.12															
Testing	Start of Mo.12	End of Mo.12															
DEVERS SUB.	SPS																
Engineering & Design	Start of Mo.2	Start of Mo.5															
Relays & Panels	Start of Mo.4	Start of Mo.7															
Construction	Start of Mo.7	Start of Mo.9															
Testing	Start of Mo.15	End of Mo.15															
SERRANO SUB.	SPS																
Engineering & Design	Start of Mo.4	Start of Mo.7															
Relays & Panels	Start of Mo.6	Start of Mo.9															
Construction	Start of Mo.9	Start of Mo.11															
Testing	Start of Mo.15	End of Mo.15															
VALLEY SUB.	SPS																
Engineering & Design	Start of Mo.6	Start of Mo.9															
Relays & Panels	Start of Mo.8	Start of Mo.11															
Construction	Start of Mo.11	Start of Mo.11															
Testing	Start of Mo.15	End of Mo.15															
VISTA SUB.	SPS																
Engineering & Design	Start of Mo.8	Start of Mo.2															
Relays & Panels	Start of Mo.10	Start of Mo.13															
Construction	Start of Mo.13	Start of Mo.15															
Testing	Start of Mo.15	End of Mo.15															

Notes: This construction schedule is a rough estimate. A detailed construction schedule can be developed after detailed engineering analyses and material procurement time, construction resources availability are determined.

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SOUTHERN CALIFORNIA EDISON COMPANY EME SUN VALLEY GENERATING FACILITY SYSTEM IMPACT STUDY

September 22, 2005

I. INTRODUCTION

Edison Mission Energy ("EME") applied to Southern California Edison ("SCE") for Distribution Service under the terms of SCE's Wholesale Distribution Access Tariff ("WDAT"). EME proposed to interconnect a 507.5 MW generation project, the Sun Valley Generating Facility ("Project"), in Riverside County near Romoland, California. The Project consists of five simple-cycle Hitachi GH1550A generators with a net output each of 101.5 MW. EME proposes to connect to the 115 kV South bus at SCE's Valley Substation. The in-service date proposed by EME is September 1, 2007.

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The results of the System Impact Study will be used as the basis to determine project cost allocation for facility upgrades in the Facilities Study. *The study accuracy and the results for the assessment of the system adequacy are contingent on the accuracy of the technical data provided by EME.* Any changes from the attached data could void the study results.

SCE's Field Engineering department has performed a System Impact Study on the SCE affected distribution network.

The study was performed for two system conditions representing: (a) 2007 Peak Load condition with maximum eastern area generation, high East-of-River/West-of-River (EOR/WOR) power flow, and high power flow into the Devers 500-kV substation, and (b) 2008 Off-Peak Load condition with maximum eastern area generation, high EOR/WOR power flow, and high power flow into the Devers 500-kV substation. These conditions reflect the critical expected loading condition for the transmission system in SCE's eastern area.

II. STUDY CONDITIONS AND ASSUMPTIONS

A. Planning Criteria

The supplemental study was conducted by applying the California Independent System Operator (CAISO) Reliability Criteria. More specifically, the main criteria applicable to this study are as follows:

Power Flow Assessment

The following contingencies are considered for transmission and sub-transmission lines and 500/230 kV transformer banks ("AA-Banks"):

- Single Contingencies (loss of one line or one AA-Bank)
- Credible Double Contingencies (loss of two lines or one line and one AA-Bank) (Outages of two AA-Banks are beyond the Planning Criteria)

The following reliability criteria are used:

Transmission Lines	Base Case	Limiting Component Normal Rating
	N-1	Limiting Component A-Rating
	N-2	Limiting Component B-Rating
AA-Banks	Base Case	Normal Loading Rating
	Long Term & Short Term	As Defined by SCE Operating Bulletins

System upgrades for transmission lines are generally recommended for all reliability criteria violations. Special Protection Schemes (SPS) may be allowed for single contingency and credible double contingency reliability criteria violation in place of system upgrade.

Congestion Assessment

The following principles were used in determining whether congestion management, special protection schemes, or facility upgrades are required to mitigate base case, single contingency, or double contingency overloads:

- Congestion management, as a means to mitigate base case overloads, can be used if it is determined to be manageable and the CAISO concurs with the implementation.
- Facility upgrades will be required if it is determined that the use of congestion management is unmanageable as defined in the congestion management section that follows.
- SPS, in lieu of facility upgrades, will be recommended if the scheme is effective, does not jeopardize system integrity, does not exceed the current CAISO single and double contingency tripping limitations, does not adversely effect existing or proposed special protection schemes in the area, and can be readily implemented.

- Facility upgrades will be required if use of protection schemes is determined to be ineffective, the amount of tripping exceeds the current CAISO single and double contingency tripping limitations, adverse impacts are identified on existing or currently proposed special protection schemes, or the scheme cannot be readily implemented.
- Congestion management in preparation for the next contingency will be required, with CAISO concurrence, if no facility upgrades or special protection schemes are implemented.

The following study method was implemented to assess the extent of possible congestion:

- a) Under Base Case with all transmission facilities in service, the system was evaluated with all existing interconnected generation and all generation requests in the area that have a queue position ahead of this request (pre-project).
- b) Under Base Case with all transmission facilities in service, the system was reevaluated with the inclusion of the Project (post-project).

If the normal loading limits of facilities are exceeded in (a), the overload is identified as an existing overload that was triggered by a project in queue ahead of the Project. If the normal loading limits of facilities are exceeded in (b) and were not exceeded in (a), the overload is identified as triggered by the addition of the Project. The Project, assuming it is a market participant, and other market participants in the area may be subjected to congestion management, potential upgrade cost and/or participation of any proposed special protection scheme if the project addition aggravates or triggers the overload. Additionally, the Project may have to participate in mitigation of overloads triggered by subsequent projects in queue, subject to FERC protocols and policies.

In order for congestion management to be a feasible alternative to system facilities, all of the following factors need to be satisfied:

- Time requirements for necessary coordination and communication between the CAISO operators, scheduling operators and SCE operators.
- Distinct Path/Corridor rating should be well defined so monitoring and detecting congestion and implementing congestion of the contributing generation resources can be performed when limits are exceeded.
- Sufficient amount of market generation in either side of the congested path/corridor should be available to eliminate market power.
- Manageable generation in the affected area is necessary so that operators can implement congestion management if required (i.e. the dispatch schedule is known and controllable).

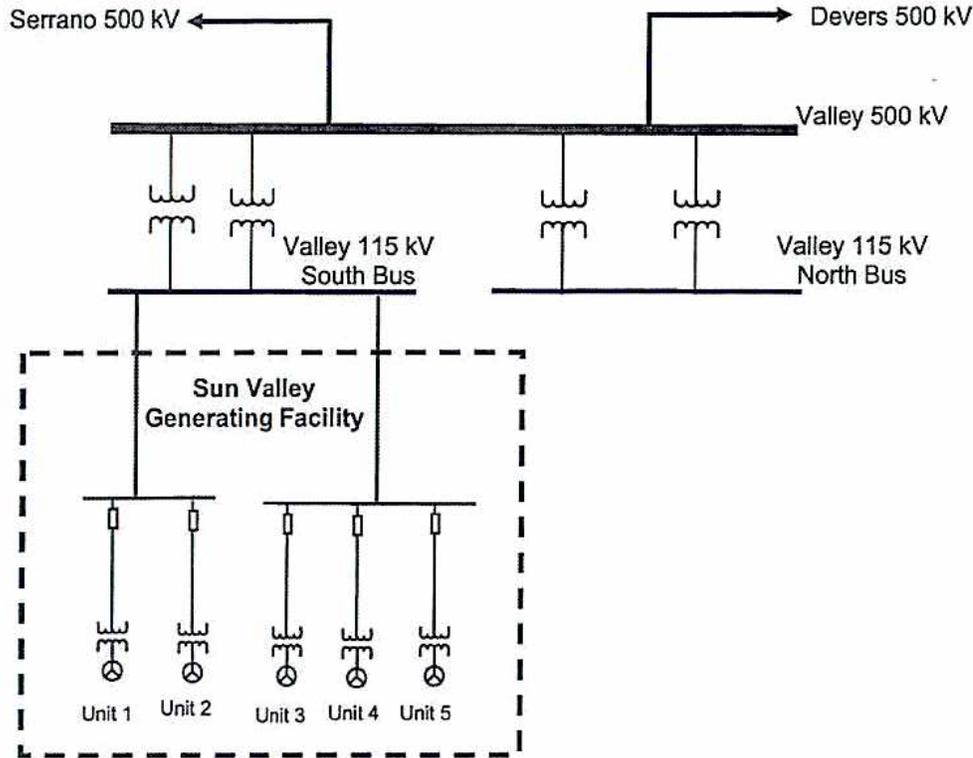
The results of these studies should identify:

- a. if capacity is available to accommodate the proposed Project and all projects ahead in queue without the need for congestion management, special protection schemes, or facility upgrades
- b. if overloads exist in the area after the addition of all projects in queue ahead of the Project and all facilities in service
- c. if congestion exists in the area with the addition of the Project and all projects ahead in queue under single and double element outage conditions assuming no new special protection schemes are in place
- d. if sufficient capacity is maintained to accommodate all Must-Run and Regulatory Must-Take generation resources with all facilities in service
- e. if sufficient capacity is maintained to accommodate the total output of any one generation resource which is not classified as Must-Run.

B. Sun Valley Generating Facility

The proposed Sun Valley Generating Facility is geographically located south and east of SCE's Valley substation and east of the intersections of Matthew Avenue and Menifee Road in Riverside County near Romoland, California. The Sun Valley Generating Facility is proposed to be radially connected to the Valley 115-kV South bus via two short 115 kV lines. Figure 1 below provides the single line diagram showing the proposed Sun Valley Generating Facility.

FIGURE 1
EME SUN VALLEY GENERATING FACILITY
SCHEMATIC SINGLE LINE DIAGRAM



C. System Conditions

To simulate the SCE transmission system for analysis, the study selected the databases that were used to conduct the annual CAISO Controlled Transmission Expansion Assessment. Power flow studies considered the existing system arrangement as well as the planned transmission projects in queue ahead of the Project. For example:

- Palo Verde-Devers No. 2 500 kV Transmission Project
- Desert Southwest Transmission Project (Midpoint Substation, Blythe I & II generation)
- All four West of Devers 230 kV lines have been upgraded
- Rancho Vista 500/230 kV substation was modeled in service

- Oak Valley 230/115 kV substation and Jurupa 230/66 kV substation were modeled in service.
- Devers-Mirage 115-kV system was modeled in “split” configuration.

The bulk power study considered scenarios that evaluated maximum EOR/WOR imports and maximum generation from Qualified Facilities in the eastern area. These conditions were evaluated to identify worst case scenarios that would stress the SCE 500 kV transmission system network in the eastern area vicinity. In addition, the study considered two system load conditions: representing 2007 Peak Load and 2008 Off-Peak Load.

D. Power Flow Study

The Power Flow Study was conducted under 2007 Peak Load and 2008 Off-Peak Load conditions with and without the Project for a total of 4 cases. Further descriptions of the case assumptions are as follows:

- 2007 Peak Load: Case 1 **without** the Project and Case 2 **with** the Project.
- 2008 Off-Peak Load: Case 3 **without** the Project and Case 4 **with** the Project.

Case 1 through 4 modeled maximum generation in SCE’s eastern area, maximum EOR/WOR power flow and high power flow into Devers 500 kV substation. Generation included: all market and all regulatory must-take units. Generation patterns were maximized in the eastern area to fully stress the system in order to identify the extent of potential congestion on the bulk power system with the addition of the Project. With the addition of the Project, SCE’s area total generation, imports, loads, and losses for each case are summarized in Table 2-1. Refer to power flow diagrams in Appendix A for detailed system conditions.

Table 2-1 POWER FLOW CASES

SCE AREA TOTAL GENERATION, IMPORT, LOAD AND LOSSES (MW)				
	2007 Peak Load		2008 Off-Peak Load	
	Case 1	Case 2	Case 3	Case 4
Generation	17019	17527	10616	11145
Imports	7091	6584	5387	4881
Load	22964	22964	14837	14837
Losses	572	574	592	616

E. Post Transient Voltage Stability Study

Those contingencies that show significant voltage deviations in the power flow analysis are selected for further analysis using governor power flow analysis. The voltage deviations are compared to the SCE guidelines of 7% for single contingency outages and 10% for double contingency outages.

F. Transient Stability Study

WECC currently is in the process of adopting Generator Electrical Grid Fault Ride Through Capability Criteria. SCE currently supports a Low Voltage Ride-Through Criteria to ensure continued reliable service. A proposed Criteria that SCE supports, is as follows:

1. Generator is to remain in-service during system faults (three phase faults with normal clearing and single-line-to-ground with delayed clearing) unless clearing the fault effectively disconnects the generator from the system.
2. During the transient period, generator is required to remain in-service for the low voltage and frequency excursions specified in WECC Table W-1 (provided below) as applied to load bus constraint. These performance criteria are applied to the generator interconnection point, not the generator terminals.
3. Generators may be tripped after the fault period if this action is intended as part of a special protection scheme.
4. This Standard will not apply to individual units or to a site where the sum of the installed capabilities of all machines is less than 10MVA, unless it can be proven that reliability concerns exist.
5. The performance criteria of this Standard may be satisfied with performance of the generators or by installing equipment to satisfy the performance criteria.
6. The performance criterion of this Standard applies to any generation independent of the interconnected voltage level.
7. No exemption from this Standard will be given because of minor impact to the interconnected system.
8. Existing generators that go through any refurbishments or any replacements are then required to meet this Standard.

Table W-1
WECC DISTURBANCE-PERFORMANCE TABLE (in addition to NERC requirements)
OF ALLOWABLE EFFECTS ON OTHER SYSTEMS

NERC and WECC Categories	Outage Frequency Associated with the Performance Category (Outage/Year)	Transient Voltage Dip Standard	Minimum Transient Frequency Standard	Post-Transient Voltage Deviation Standard (See Note 2)
A	Not Applicable	Nothing in Addition to NERC		
B	≥ 0.33	Not to exceed 25% at load buses or 30% at non-load buses. Not to exceed 20% for more than 20 cycles at load buses.	Not below 59.6 Hz for 6 cycles or more at a load bus	Not to exceed 5% at any bus
C	0.033 – 0.33	Not to exceed 30% at any bus. Not to exceed 20% for more than 40 cycles at load buses.	Not below 59.0 Hz for 6 cycles or more at a load bus	Not to exceed 10% at any bus
D	< 0.033	Nothing in Addition to NERC		

Note 2: As an example in applying the WECC Disturbance-Performance Table, Category B disturbance in one system shall not cause a transient voltage dip in another system that is greater than 20% for more than 20 cycles at load buses, or exceed 25% at load buses or 30% at non-load buses at any time other than during the fault.

G. Short Circuit Duty Study

Short Circuit Duty (SCD) analysis was performed as part of this study.

III. POWER FLOW STUDY RESULTS

A. 2007 Peak Load Results

Base Case

There is no base case overload triggered by the Sun Valley Generating Facility with the addition of the Project.

Single Contingencies

With the addition of the Project, the power flow study identified that the overload on Etiwanda-San Bernardino 230 kV line increased from 125% to 129% for the contingency of San Bernardino-Vista 230 kV. See Table B-1 in Appendix B for 2007 Peak Load power flow results.

Double Contingencies

With the addition of the Project, the power flow study identified that the overload on Etiwanda-San Bernardino 230 kV line Project increased from 143% to 147% for two N-2 contingencies. See Table B-1 in Appendix B for 2007 Peak Load power flow results.

B. 2008 Off-Peak Load Results

Base Case

With the addition of the Project, the power flow study identified that Serrano-Valley 500 kV line overload triggered by projects ahead of the Project was exacerbated. The power flow of Serrano-Valley 500 kV increased from 101% (Pre Project) to 113% (Post Project). See Table B-2 in Appendix B for 2008 light Off-Peak Load power flow results.

Single Contingencies

With the addition of the Project, the power flow study identified seven transmission lines with overloads concerns under ten N-1 contingencies. Table 3-1 lists the worst overloads.

Table 3-1. Worst N-1 overloads (2008 Off-Peak Load Results)

Overloaded Transmission Facilities	Transmission Outage	Normal Rating	Emergency Rating	Pre Project		Post Project		Project Impact	
		Amps	Amps	Amps	Percent	Amps	Percent	Amps	Percent
Serrano-Valley 500 kV	N.Gila-Imperial Valley 500 kV	3000	3000	3441	115%	3850	128%	409	13%
Devers-Vista No.1 230 kV	Serrano-Valley 500 kV	2480	2850	2734	110%	2920	118%	186	8%
Devers-Vista No.2 230 kV	Serrano-Valley 500 kV	2480	2850	2734	110%	2920	118%	186	8%
Etiwanda-San Bernardino 230 kV	Serrano-Valley 500 kV	1800	2000	2197	122%	2340	130%	143	8%
Etiwanda-Vista 230 kV	Serrano-Valley 500 kV	2000	2000	2402	120%	2566	128%	164	8%
Mira Loma-Walnut 230 kV	Mira Loma-Olinda 230 kV	2000	2000	2214	111%	2276	114%	62	3%
Barre-Lewis 230 kV	Barre-Villa Park 230 kV	3000	3450	4281	143%	4393	146%	113	3%

Table 3-1 shows that overloads on Devers-Vista No.1 and No.2 230 kV lines were triggered by the Project. The Project increases the post contingency loading on Devers-Vista No. 1 and No.2 230 kV lines from 110% (Pre Project) to 118% (Post Project) for the loss of Serrano-Valley 500 kV line. The remaining five overloads were Pre-Project overloads. See Table B-2 for detailed power flow results for 2008 Off-Peak Load study.

Double Contingencies

With the addition of the Project, the power flow study identified eight transmission lines with overloads concerns under twenty-four N-2 contingencies. Table 3-2 lists the worst overloads. See Table B-2 for 2008 Off-Peak Load power flow results.

The overloads on Devers-Vista No. 1 and No.2 230 kV lines were triggered by the Project. The remaining nine out of eleven overloads were Pre-Project overloads.

Table 3-2. Worst N-2 overloads (2008 Off-Peak Load Results)

Overloaded Transmission Facilities	Transmission Outage	Normal Rating	Emergency Rating	Pre Project		Post Project		Project Impact	
		Amps	Amps	Amps	Percent	Amps	Percent	Amps	Percent
Serrano-Valley 500 kV	Etiwanda-San Bernardino 230 kV San Bernardino-Vista 230 kV	3000	3000	3413	114%	3815	127%	402	13%
Etiwanda-San Bernardino 230 kV	Devers-Vista No.1 or 2 230 kV San Bernardino-Vista 230 kV	1800	2000	2590	144%	2667	148%	78	4%
Etiwanda-Vista 230 kV	Serrano-Valley 500 kV San Onofre-Serrano 230 kV	2000	2000	2434	122%	2601	130%	167	8%
Mira Loma-Walnut 230 kV	Barre-Villa Park 230 kV Barre-Lewis 230 kV	2000	2000	2191	110%	2259	113%	68	3%
Mira Loma-Vista No.2 230 kV	Etiwanda-San Bernardino 230 kV Etiwanda-Vista 230 kV	2300	3000	3270	142%	3373	147%	103	5%
Barre-Lewis 230 kV	San Onofre-Santiago No.1 230 kV San Onofre-Santiago No.2 230kV	3000	3750	4128	138%	4240	141%	112	3%
Barre-Ellis 230 kV	San Onofre-Santiago No.1 230 kV San Onofre-Santiago No.2 230kV	2480	2480	3262	132%	3341	135%	79	3%
Lewis-Villa Park 230 kV	Lewis-Serrano No. 1 230 kV Lewis-Serrano No. 2 230 kV	2400	2400	2806	117%	2865	119%	58	2%

C. Solutions for the Transmission Overloads

1. Devers-Vista No.1 and No.2 230 kV T/L: the overloads were triggered by the Project. The overloads and associated system upgrade and SPS will be further investigated in Section VII.
2. Serrano-Valley 500 kV T/L: the proposed upgrade to fix the Pre Project overload on the Serrano-Valley 500 kV T/L is to replace 3000A GIS Air-to-Gas Bushings with 4000A at both Serrano and Valley line terminations. The upgrade will accommodate the increased loading by the Project.
3. Etiwanda-San Bernardino 230 kV T/L: the proposed upgrade to fix the Pre-Project overloads on the Etiwanda-San Bernardino 230 kV T/L is to replace two 1200A Disconnect Switches at Etiwanda with a higher rating of 2000A. The upgrade will accommodate the increased loading by the Project.
4. Etiwanda-Vista 230 kV T/L: the proposed upgrade to fix the Pre-Project overloads on the Etiwanda-Vista 230 kV T/L is to replace 2000A Wave Trap at Etiwanda with a higher rating of 3000A. The upgrade will accommodate the increased loading by the Project.

5. Mira Loma-Walnut 230 kV T/L: the proposed upgrade to fix the Pre-Project overloads on the Mira Loma-Walnut 230 kV T/L is to remove the 2000A Wave Trap at Etiwanda. The upgrade will accommodate the increased loading by the Project.
6. Barre-Lewis 230 kV T/L: The overload is caused by insufficient generation dispatch in South Orange County. It needs to be fixed by committing RMR generation or by SCE Annual Transmission Expansion Planning Process.
7. Barre-Ellis 230 kV T/L: The overload is caused by insufficient generation dispatch in South Orange County. It needs to be fixed by committing RMR generation or by SCE Annual Transmission Expansion Planning Process.
8. Lewis-Villa Park 230 kV T/L: The overload is caused by insufficient generation dispatch in South Orange County. It needs to be fixed by committing RMR generation or by SCE Annual Transmission Expansion Planning Process.

IV. POST TRANSIENT VOLTAGE STUDY RESULTS

There were no additional identified post transient voltage criteria violations due to the addition of the Project. Refer to Appendix C for a list of contingencies performed and Appendix D for the results of post-transient runs.

V. TRANSIENT STABILITY STUDY RESULTS

A. GE PSLF Version 14.3 Models

GE PSLF Version 14.3 supports updated system configurations and the generator dynamic models proposed by EME for the Sun Valley Generating Facility.

GENROU

This model is used to represent the machine dynamics for the generators.

REXS

This model is used to represent the exciter dynamics for the generators.

GGOV1

This model is used to represent the turbine/governor dynamics for the generators.

PSS2A

This model is used to represent the power system stabilizer dynamics for the generators. The parameter values for each of the 4 models were provided by EME.

B. Transient Stability Study Results

Transient stability sensitivity studies were performed with a time delay assumption to allow for fault clearing and voltage recovery. These transient studies determined that the system remained stable under both single and double contingency outage conditions with the addition of the Project. Transient stability studies shared the same list of contingencies as in Appendix C.

Transient stability plots including the Project were provided in Appendix E and F.

Appendix E illustrated Peak Load condition system response plots after contingencies for Pre-project case and Post-Project case.

Appendix F illustrated Off-Peak Load condition system response plots after contingencies for Pre-project case and Post-Project case.

VI. SHORT CIRCUIT STUDY RESULTS

The study results indicated that the Project increases three-phase short-circuit duties at 22 bulk power substations by 0.1kA or more as shown in the following Table 6-1. The breaker evaluation indicates that the Project triggers the need to replace two 38.4kA 500 kV CBs at Mira Loma Substation.

Table 6-1. Maximum 3-phase Short Circuit Duties Results

Bus Name	Bus KV	PRE CASE		POST CASE		DELTA KA
		X/R	KA	X/R	KA	
DEVERS	500	16.7	23.9	17	24.4	0.5
LUGO	500	22.9	47.1	23	47.3	0.2
MIRALOMA	500	26	35.8	26.2	36.1	0.3
R VISTA	500	34.6	32.7	34.8	32.9	0.2
SERRANO	500	25.7	32.2	26.1	32.8	0.6
VINCENT	500	17.1	34.4	17.1	34.5	0.1
BARRE	230	18.7	50.7	18.8	50.8	0.1
CENTER S	230	15.8	41.2	15.8	41.3	0.1
CHINO	230	17.5	49.5	17.5	49.7	0.2
DEVERS	230	21.3	45.1	21.5	45.5	0.4
ETIWANDA	230	28.7	62.4	28.8	62.6	0.2
LEWIS	230	21.2	45.5	21.3	45.7	0.2
MRLOMA E	230	24.5	64.3	24.6	64.6	0.3
MRLOMA W	230	20.9	50.8	21	51	0.2
OLINDA	230	14.9	30.2	14.9	30.3	0.1
R VISTA	230	29	62.4	29.1	62.7	0.3
S.ONOFRE	230	26.7	46.1	26.7	46.2	0.1
SANBRDNO	230	21.2	40.3	21.2	40.4	0.1
SERRANO	230	25.3	55	25.6	55.4	0.4
VILLA PK	230	22.3	47.8	22.5	48	0.2
VISTA	230	20.1	49.2	20.1	49.4	0.2
BLYTHESC	161	13	20.2	13	20.3	0.1

VII. CONCLUSIONS

The study results show that the existing system is not adequate to accommodate the Sun Valley Generating Project without upgrades.

A. Power Flow Study Conclusions

The power flow study results show that overload problems were found on several transmission lines for base-case, N-1 and N-2 contingencies. Specifically:

Base Case

Under Peak Load conditions, there was no base case overload identified.

Under Off-Peak Load conditions, one pre-project base case overload problem was exacerbated by the addition of the Project. The power flow of Serrano-Valley 500 kV increased from 101% to 113%.

Single Contingencies

Under Peak Load conditions, there was one single contingency which exacerbates the overloading problems triggered by projects ahead of the Project. The overloaded line is Etiwanda-San Bernardino 230 kV line. The power flow increased from 125% to 129%.

Under Off-Peak Load conditions, there were ten single contingencies which trigger or exacerbate the overloading problems on seven transmission lines. With the addition of the Project, the post-contingency loadings range from 102% to 146%. The loading increase ranges from 3% to 13%.

Double Contingencies

Under Peak Load conditions, there were two double contingencies which exacerbate the overloading problems triggered by projects ahead of the Project. The overloaded line is Etiwanda-San Bernardino 230 kV line. The power flow increased from 143% to 147%.

Under Off-Peak Load conditions, there were twenty-four double contingencies which trigger or exacerbate the overloading problems on eight transmission lines. With the addition of the Project, the post-contingency loadings range from 108% to 148%. The loading increase ranges from 2% to 13%.

B. Post Transient Voltage Stability Study Conclusions

There was no problem identified on post-transient voltage stability by the addition of the Sun Valley Generating Project.

C. Transient Stability Study Conclusions

There was no problem identified on transient stability response to system contingencies by the addition of the Sun Valley Generating Project.

D. Short Circuit Study Conclusions

The study results indicated that Sun Valley Generating Project increases three-phase short-circuit duties at 22 bulk power substations by 0.1kA or more. The Project triggers the need to replace two 38.4kA 500 kV CBs at Mira Loma Substation.

VIII. SCOPE OF WORK

The scope of the upgrades required to accommodate the Project is listed below. These upgrades are required to be in-service by the proposed interconnection/testing date on September 1, 2007.

1. Install two new Double-Breaker 115 kV Line Positions at Valley Substation to terminate the two new 115 kV Generation Tie Lines.
Total Cost = [REDACTED]. The cost breakdown is below
 - [REDACTED] for System Upgrades (not subject to ITCC tax)
 - [REDACTED] for Interconnection Facilities (not including tax liability security)
2. Install one Remote Terminal Unit (RTU) at Valley Substation.
Total Cost = [REDACTED] (not including tax liability security)
3. Install a Special Protection Scheme (SPS) for mitigation of the overloads on Devers-Vista No.1 and No.2 230 kV lines for the N-1 contingency of Serrano-Valley 500 kV line. For a summary of the generation curtailment requirements, see Table 8-1. Total Cost = [REDACTED]. The cost breakdown is below:
 - Install SPS relays at Serrano, Valley, Devers and Vista substations for a cost of [REDACTED] at each station (not subject to ITCC tax)
 - [REDACTED] for IT equipment (not subject to ITCC tax)

Table 8-1. Generation Curtailment Requirements

<i>Contingency Description</i>	<i>Overloaded Equipment</i>	<i>Type</i>	<i>Load Condition</i>	<i>SPS/Curtailment (MW)</i>
Serrano-Valley 500 kV	Devers-Vista No.1 and No.2 line	N-1	Off-Peak	250

4. Replace the two 38.4kA 500 kV CBs at Mira Loma Substation with 40kA units.
Total Cost = [REDACTED] (not subject to ITCC tax).

Notes: There are other 230kV and 500kV circuit breakers that would need to be replaced or upgraded. The cost allocations are currently assigned to other projects ahead of the Project in the queue.

5. There are other transmission upgrades to fix the overloads triggered by the projects in queue ahead of the Project. These upgrades will accommodate the Sun Valley Generating Facilities along with all the projects ahead of the Project. These upgrades include the following:
 - a. Overload on the Serrano-Valley 500 kV T/L: Replace 3000A GIS Air-to-Gas Bushings with 4000A at both Serrano and Valley line terminations.
 - b. Overload on the Etiwanda-San Bernardino 230 kV T/L: Replace two 1200A Disconnect Switches at Etiwanda with a higher rating of 2000A.

- c. Overload on the Etiwanda-Vista 230 kV T/L: Replace 2000A Wave Trap at Etiwanda with a higher rating of 3000A.
 - d. Overload on the Mira Loma-Walnut 230 kV T/L: Remove the 2000A Wave Trap at Etiwanda.
6. The following overloads are caused by insufficient generation dispatch in South Orange County during Off-Peak load conditions. These overloading problems need to be addressed by committing RMR generation or by the SCE Annual Transmission Expansion Planning Process. These overloads are:
- a. Overload on the Barre-Lewis 230 kV T/L
 - b. Overload on the Barre-Ellis 230 kV T/L
 - c. Overload on the Lewis-Villa Park 230 kV T/L

Notes: Study results may be affected by changes in other projects ahead of the queue in the area. A re-study may be required if there are changes in the project queue or the scope of projects ahead in the queue. All cost estimates are rough order of magnitude, and are non binding cost estimates.

In addition, an operational study is required to identify which upgrades need to be completed by the proposed operating date of the Sun Valley Generating Project.

APPENDIX A POWER FLOW DIAGRAMS

2007 Peak Load Case Power Flow Diagram (Pre Project)

2007 Peak Load Case Power Flow Diagram (Post Project)

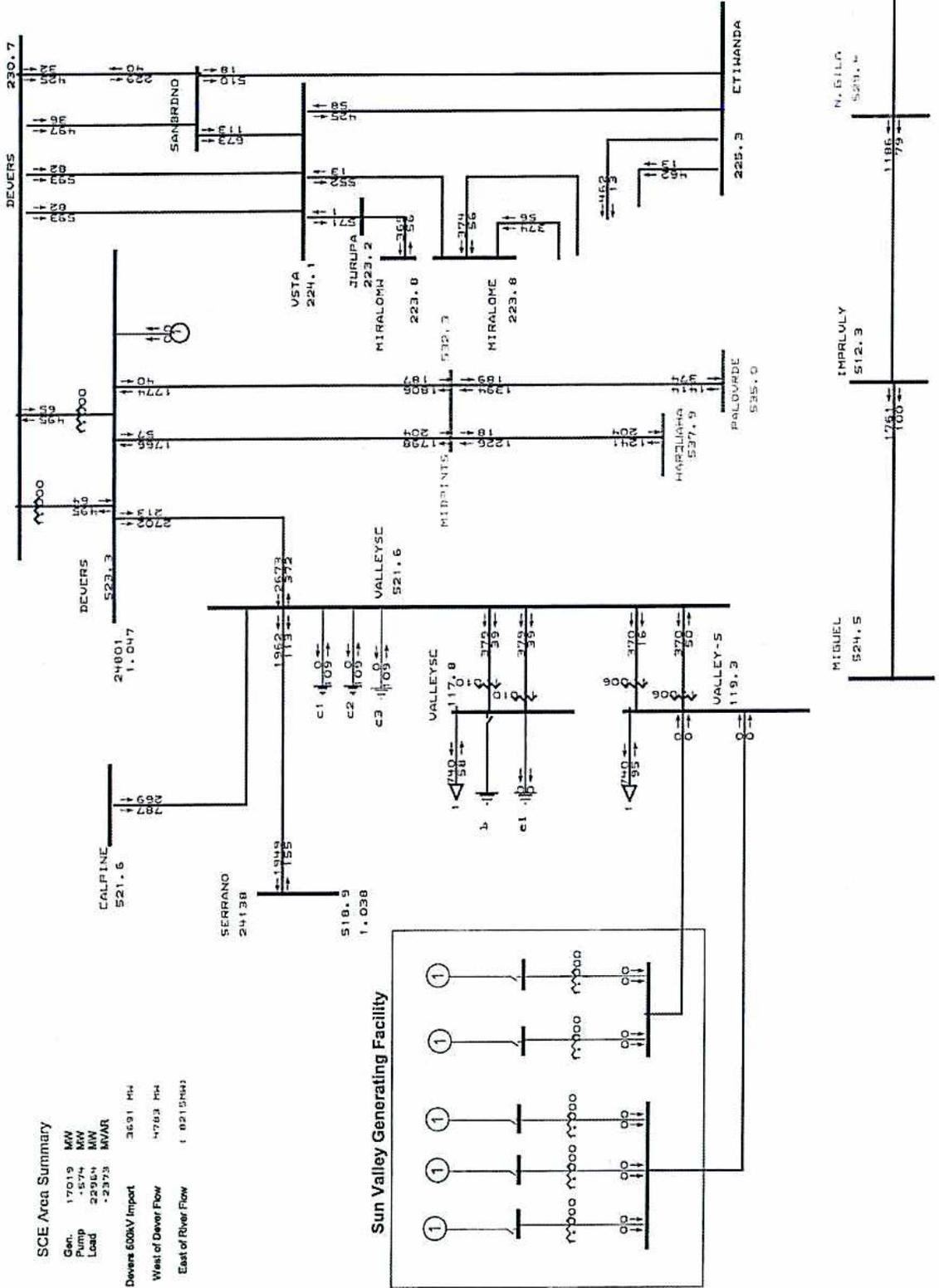
2008 Off-Peak Load Case Power Flow Diagram (Pre Project)

2008 Off-Peak Load Case Power Flow Diagram (Post Project)

Devers-Valley Area 500/230kV System

SCE Area Summary

Gen.	17019 MW
Pump	-574 MW
Load	22964 MW
MVAR	-2373
Devers 600kV Import	3631 MW
West of Devers Flow	4763 MW
East of River Flow	10215 MW



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EME Sun Valley Pre Project
2007 Peak Load Case

Fri Sep 23 10:10:32 2005



PSLF Program
sv9f-sis.drw
Rating =1

Devers-Valley Area 500/230kV System

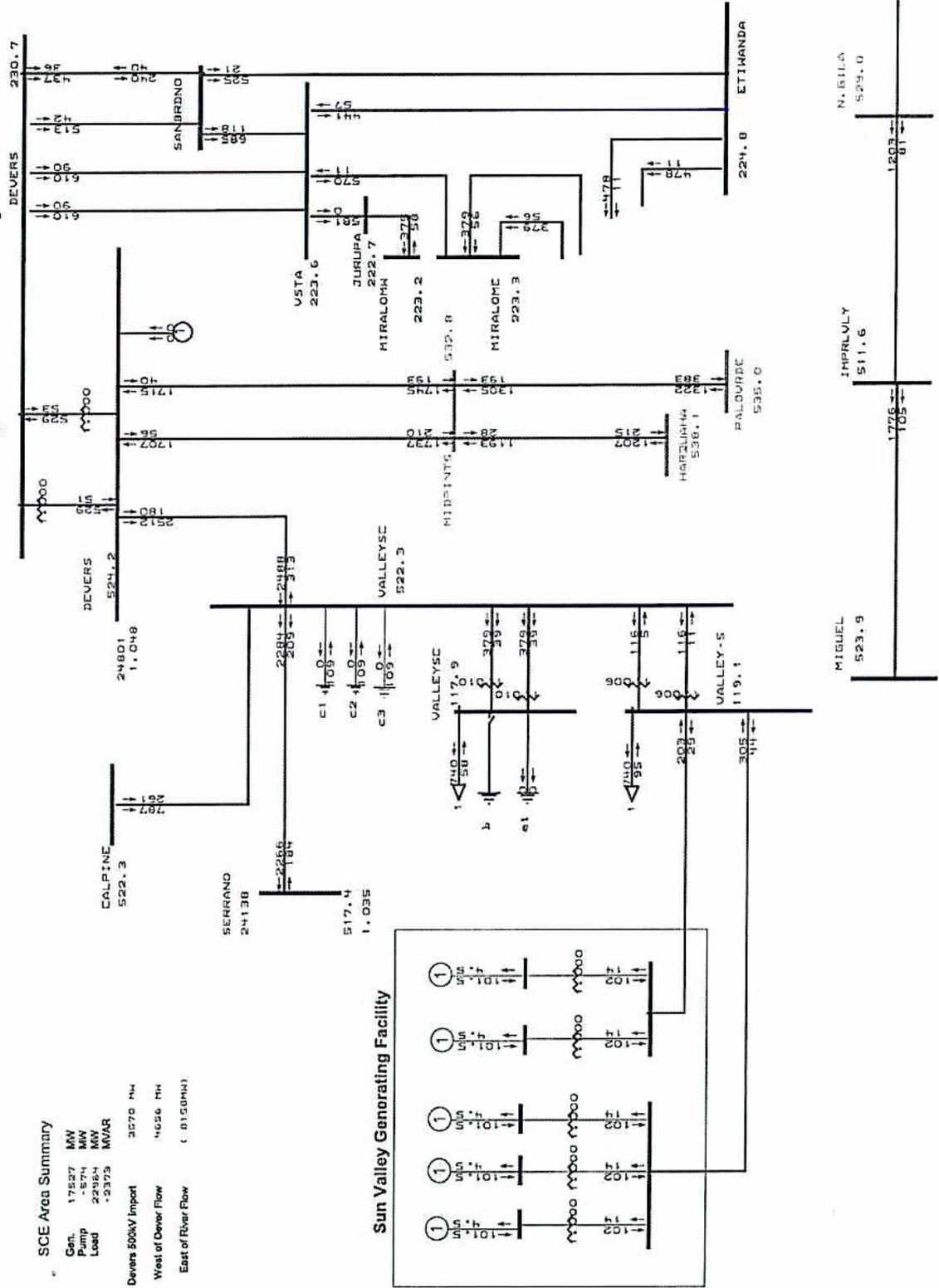
SCE Area Summary

Gen. 17637 MW
 Pump -874 MW
 Load 22064 MW
 MVAR -3373

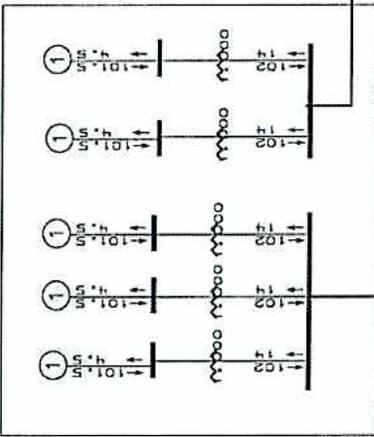
Devers 500kV Import 3578 MW

West of Dever Flow 1656 MW

East of River Flow (8150MW)



Sun Valley Generating Facility



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EME Sun Valley Post Project
 2007 Peak Load Case



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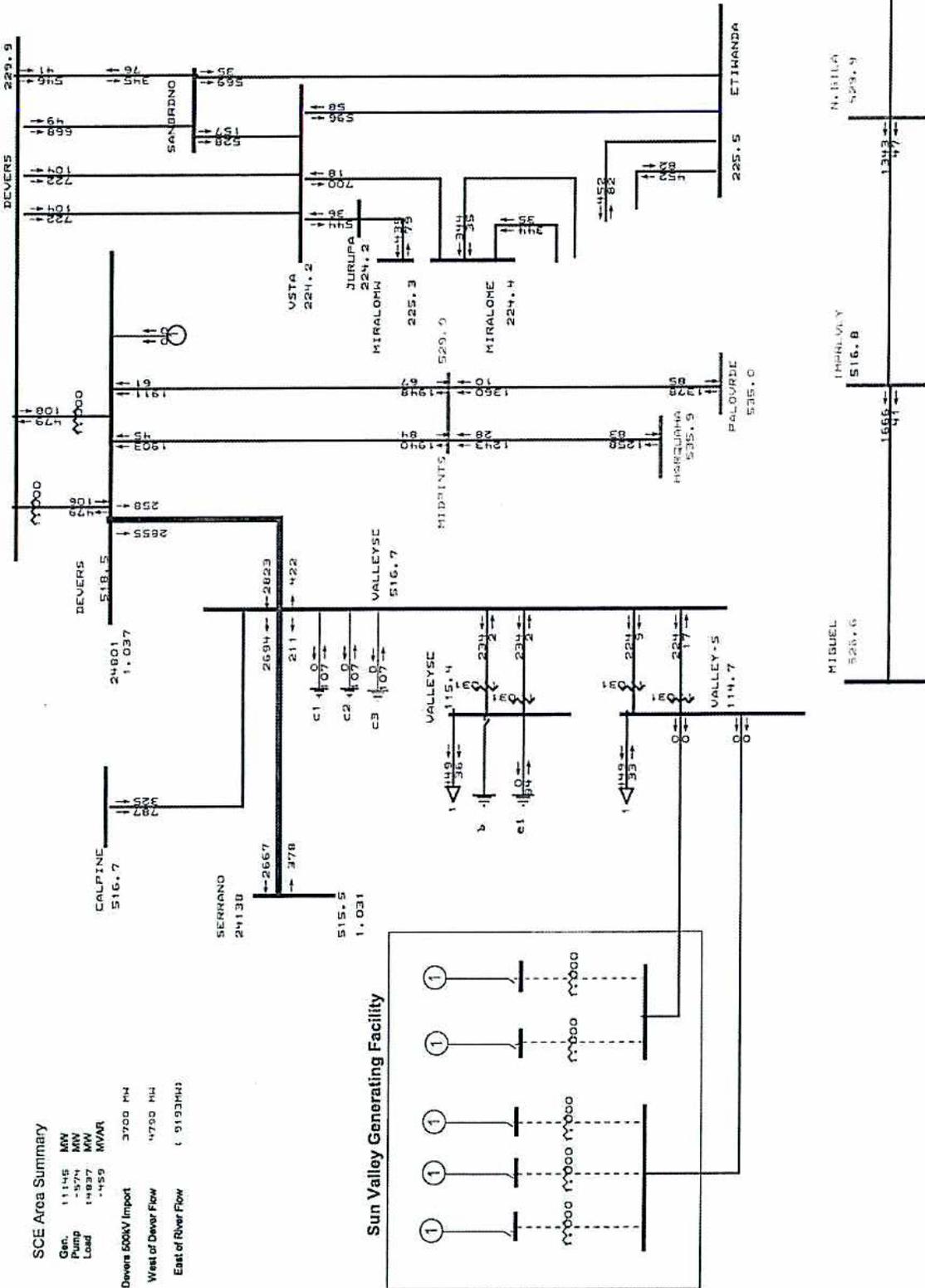
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Devers-Valley Area 500/230kV System

SCE Area Summary

Gen. 11145 MW
 Pump -574 MW
 Load 11837 MW
 MVAR -455

Devers 500kV Import 3700 MW
 West of Devers Flow 4700 MW
 East of River Flow (9193MW)



Sun Valley Generating Facility

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EME Sun Valley Pre Project
 2008 Off-Peak Load Case

Fri Sep 23 10:14:26 2005



PSLF Program
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Devers-Valley Area 500/230kV System

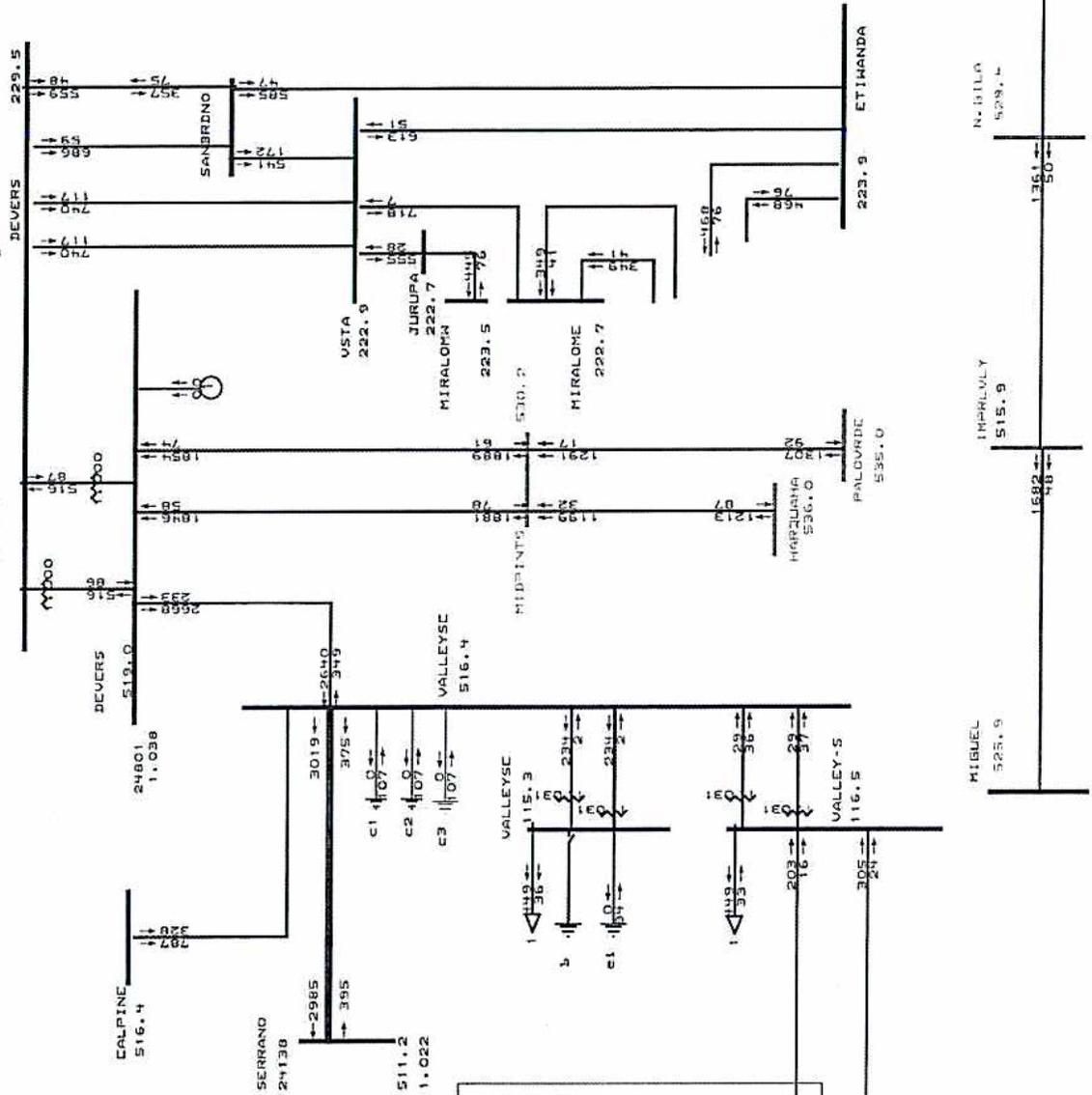
SCE Area Summary

Gen. 11145 MW
 Pump -574 MW
 Load 14837 MW
 MVAR -459

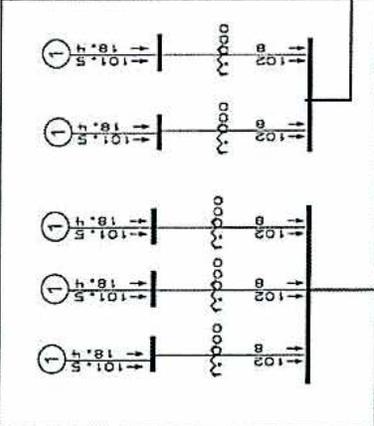
Devers 500kV Import 3700 MW

West of Dever Flow 4700 MW

East of River Flow (5193MW)



Sun Valley Generating Facility



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EME Sun Valley Post Project

2008 Off-Peak Load Case

Fri Sep 23 10:12:47 2005

PSLF Program
 sv9f-sis.drw
 Rating = 1



APPENDIX B POWER FLOW RESULTS

Table B-1 2007 Peak Load Power Flow Study Results

Transmission Outage	Outage Type	Overloaded Transmission Facilities	Normal Rating Amps	Emergency Rating Amps	Pre Project		Post Project		Project Impact	
					Amps	Percent	Amps	Percent	Amps	Percent
San Bernardino-Vista 230 kV	N-1	Etiwanda-San Bernardino 230 kV	1800	2000	2258	125%	2316	129%	29	4%
Devers-Vista No. 1 230 kV San Bernardino-Vista 230 kV	N-2	Etiwanda-San Bernardino 230 kV	1800	2000	2569	143%	2639	147%	70	4%
Devers-Vista No. 2 230 kV San Bernardino-Vista 230 kV	N-2	Etiwanda-San Bernardino 230 kV	1800	2000	2569	143%	2639	147%	70	4%

Table B-2 2008 Off-Peak Load Power Flow Study Results

Transmission Outage	Outage Type	Overloaded Transmission Facilities	Normal Rating		Emergency Rating	Pre Project		Post Project		Project Impact		
			Amps	Percent		Amps	Percent	Amps	Percent	Amps	Percent	
Base Case	N-0	Serrano-Valley 500 kV	3000		3000	101%	3017	113%	3401	113%	384	12%
Hassayampa-North Gila 500 kV	N-1	Serrano-Valley 500 kV	3000		3000	114%	3418	127%	3823	127%	405	13%
Imperial Valley - Miguuel 500 kV	N-1	Serrano-Valley 500 kV	3000		3000	114%	3406	127%	3812	127%	407	13%
North Gila - Imperial Valley 500 kV	N-1	Serrano-Valley 500 kV	3000		3000	115%	3441	128%	3850	128%	409	13%
Serrano-Valley 500 kV	N-1	Etiwanda-Vista 230 kV	2000		2000	120%	2402	128%	2566	128%	164	8%
	N-1	Etiwanda-San Bernardino 230 kV	1800		2000	122%	2197	130%	2340	130%	143	8%
	N-1	Devers-Vista No.1 230 kV	2480		2850	110%	2734	118%	2920	118%	186	8%
	N-1	Devers-Vista No.2 230 kV	2480		2850	110%	2734	118%	2921	118%	187	8%
San Bernardino-Vista 230 kV	N-1	Etiwanda-San Bernardino 230 kV	1800		2000	123%	2220	127%	2290	127%	70	4%
Jurupa-Vista 230 kV	N-1	Etiwanda-Vista 230 kV	2000		2000	99%	1985	102%	2047	102%	63	3%
Mira Loma-Vista 230 kV	N-1	Etiwanda-Vista 230 kV	2000		2000	114%	2288	118%	2362	118%	74	4%
Etiwanda-San Bernardino 230 kV	N-1	Etiwanda-Vista 230 kV	2000		2000	105%	2094	108%	2164	108%	70	3%
Mira Loma-Olinda 230 kV	N-1	Mira Loma-Walnut 230 kV	2000		2000	111%	2214	114%	2276	114%	62	3%
Barre-Villa Park 230 kV	N-1	Barre-Lewis 230 kV	3000		3450	143%	4281	146%	4393	146%	113	3%
Devers-Vista No.1 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	117%	3509	130%	3906	130%	397	13%
Devers-Vista No.2 230 kV			3000		3000	114%	3407	127%	3800	127%	393	13%
Devers-San Bernardino 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	112%	3347	125%	3741	125%	394	13%
Devers-Oak Valley 230 kV			3000		3000	115%	3453	128%	3849	128%	397	13%
Devers-San Bernardino 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	115%	3453	128%	3849	128%	397	13%
Devers-San Bernardino 230 kV			3000		3000	115%	3453	128%	3849	128%	397	13%

Table B-2 2008 Off-Peak Load Power Flow Study Results

Transmission Outage	Outage Type	Overloaded Transmission Facilities	Normal Rating		Emergency Rating	Pre Project		Post Project		Project Impact	
			Amps	Percent		Amps	Percent	Amps	Percent	Amps	Percent
Devers-Vista No.2 230 kV Devers-Oak Valley 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3388	113%	3781	126%	393	13%
Devers-Vista No.2 230 kV Oak Valley-San Bernardino 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3335	111%	3729	124%	393	13%
Devers-Vista No.1 230 kV Devers-San Bernardino 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3453	115%	3849	128%	397	13%
Devers-Vista No.1 230 kV Devers-Oak Valley 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3388	113%	3781	126%	393	13%
Devers-Vista No.1 230 kV Oak Valley-San Bernardino 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3335	111%	3729	124%	393	13%
Devers-Vista No.1 230 kV San Bernardino-Vista 230 kV	N-2	Etiwanda-San Bernardino 230 kV	1800		2000	2590	144%	2667	148%	78	4%
Devers-Vista No.2 230 kV San Bernardino-Vista 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3320	111%	3712	124%	392	13%
Devers-Vista No.2 230 kV San Bernardino-Vista 230 kV	N-2	Etiwanda-San Bernardino 230 kV	1800		2000	2590	144%	2667	148%	78	4%
Devers-Vista No.1 230 kV Etiwanda-San Bernardino 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3320	111%	3712	124%	392	13%
Devers-Vista No.2 230 kV Etiwanda-San Bernardino 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3296	110%	3685	123%	390	13%
Devers-Vista No.2 230 kV Etiwanda-San Bernardino 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3296	110%	3685	123%	390	13%
Etiwanda-San Bernardino 230 kV San Bernardino-Vista 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3413	114%	3815	127%	402	13%
Etiwanda-San Bernardino 230 kV Etiwanda-Vista 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3247	108%	3636	121%	389	13%
Etiwanda-Ranch Vista No.1 230 kV Etiwanda-Ranch Vista No.2 230 kV	N-2	Mira Loma-Vista No.2 230 kV	2300		3000	3270	142%	3373	147%	103	5%
Etiwanda-Ranch Vista No.2 230 kV Mira Loma-Vista No.2 230 kV	N-2	Serrano-Valley 500 kV	3000		3000	3187	106%	3578	119%	391	13%
Mira Loma-Olinda 230 kV Center-Olinda 230 kV	N-2	Mira Loma-Walnut 230 kV	2300		3000	2958	129%	3062	133%	104	4%
	N-2		2000		2000	2097	105%	2160	108%	63	3%

Table B-2 2008 Off-Peak Load Power Flow Study Results

Transmission Outage	Outage Type	Overloaded Transmission Facilities	Normal Rating Amps	Emergency Rating Amps	Pre Project		Post Project		Project Impact	
					Amps	Percent	Amps	Percent	Amps	Percent
San Onofre-Santiago No.1 230 kV	N-2	Serrano-Valley 500 kV	3000	3000	3171	106%	3569	119%	398	13%
San Onofre-Santiago No.2 230 kV	N-2	Barre-Lewis 230 kV	3000	3750	4128	138%	4240	141%	112	3%
	N-2	Barre-Ellis 230 kV	2480	2480	3262	132%	3341	135%	79	3%
Lewis-Serrano No.1 230 kV	N-2	Lewis-Villa Park 230 kV	2400	2400	2806	117%	2865	119%	58	2%
Lewis-Serrano No.2 230 kV	N-2	Barre-Lewis 230 kV	3000	3750	4051	135%	4157	139%	106	4%
Barre-Villa Park 230 kV	N-2	Mira Loma-Walnut 230 kV	2000	2000	2191	110%	2259	113%	68	3%
Barre-Villa Park 230 kV	N-2	Etiwanda-Vista 230 kV	2000	2000	2417	121%	2582	129%	165	8%
Chino-Serrano 230 kV	N-2	Etiwanda-San Bernardino 230 kV	1800	2000	2202	122%	2345	130%	143	8%
Serrano-Valley 500 kV	N-2	Etiwanda-Vista 230 kV	2000	2000	2408	120%	2572	129%	164	9%
Chino-Viejo 230 kV	N-2	Etiwanda-San Bernardino 230 kV	1800	2000	2205	123%	2347	130%	142	7%
Serrano-Valley 500 kV	N-2	Etiwanda-Vista 230 kV	2000	2000	2434	122%	2601	130%	167	8%
San Onofre-Serrano 230 kV	N-2	Etiwanda-San Bernardino 230 kV	1800	2000	2225	124%	2369	132%	144	8%
Serrano-Valley 500 kV	N-2	Etiwanda-San Bernardino 230 kV	1800	2000	2225	124%	2369	132%	144	8%

APPENDIX C LIST OF CONTINGENCIES

Table C-1. Selected Contingencies For Post-Transient Study and Transient Stability Study

CONTINGENCY SWITCHINF FILE NAME	CONTINGENCY DESCRIPTIONS
DEVERS-SBOAKV-DLO	LOSS OF DEVERS – SAN BERNARDINO 230KV # 1 LINE DEVERS – OAK VALLEY 230KV # 1 LINE
DEVERS-VALLEY-SLO	LOSS OF DEVERS – VALLEY 500KV LINE
HNGILA-SLO	LOSS OF HASSAYAMPA – NORTH GILA 500KV LINE
LUGO-SOUTH-DLO-12SLG	LOSS OF LUGO – MIRA LOMA 500KV #1 & #2 LINES
SERRANO-NORTH-DLO	LOSS OF SERRANO - MIRLOMA 500KV LINE SERRANO – RACHO VISTA 500KV LINE
SONGS-G1	LOSS OF SONGS GENERATION UNIT #2
VALLEY-SERRANO-SLO	LOSS OF SERRANO – VALLEY 500KV LINE

APPENDIX D POST TRANSIENT STUDY RESULTS

System Conditions	2007 Peak Load Case (Pre-Project)	2007 Peak Load Case (Post-Project)	2008 Off-Peak Load (Pre-Project)	2008 Off-Peak Load (Post-Project)
Contingencies	DEVERS MIRALOMA MIGUEL 115 500	DEVERS MIRALOMA MIGUEL 115 500	DEVERS MIRALOMA MIGUEL 115 500	DEVERS MIRALOMA MIGUEL 115 500
Devers-SBOakV-dlo	616 2735 @0.798 @0.890	618 2683 @0.798 @0.890	399 1469 @0.780 @0.926	400 1354 @0.780 @0.926
Devers-Valley-slo	565 1910 @0.798 @0.922	568 1925 @0.798 @0.922	308 927 @0.800 @0.958	331 866 @0.780 @0.960
HNGila-slo-cgcc	615 2277 @0.798 @0.900	617 2274 @0.798 @0.902	380 1063 @0.780 @0.934	376 869 @0.780 @0.936
Lugo-South-dlo-12sig	639 2405 @0.798 @0.822	645 2486 @0.798 @0.818	458 1493 @0.780 @0.866	461 1409 @0.780 @0.874
SONGS-g1	638 2287 @0.798 @0.912	641 2308 @0.798 @0.912	451 1563 @0.780 @0.924	451 1493 @0.780 @0.926
Serrano-North-dlo	656 2932 @0.798 @0.852	655 2832 @0.798 @0.854	464 1889 @0.780 @0.902	462 1695 @0.780 @0.912
Valley-Serrano-slo	624 1937 @0.798 @0.916	615 1659 @0.798 @0.926	352 712 @0.798 @0.960	249 241 @0.828 @0.968

Table D-1 Post Transient VAR Margin Results for System Critical Buses

APPENDIX E STABILITY PLOTS FOR PEAK LOAD CONDITIONS

2007 Peak Load (Pre Project)

Pre-Project Devers-SBOakV DLO

Pre-Project Devers-Valley SLO

Pre-Project Hassayampa – Ngila SLO

Pre-Project Lugo South DLO

Pre-Project Serrano North DLO

Pre-Project SONGS G-1

Pre-Project Valley - Serrano SLO

2007 Peak Load (Post Project)

Post-Project Devers-SBOakV DLO

Post-Project Devers-Valley SLO

Post-Project Hassayampa – Ngila SLO

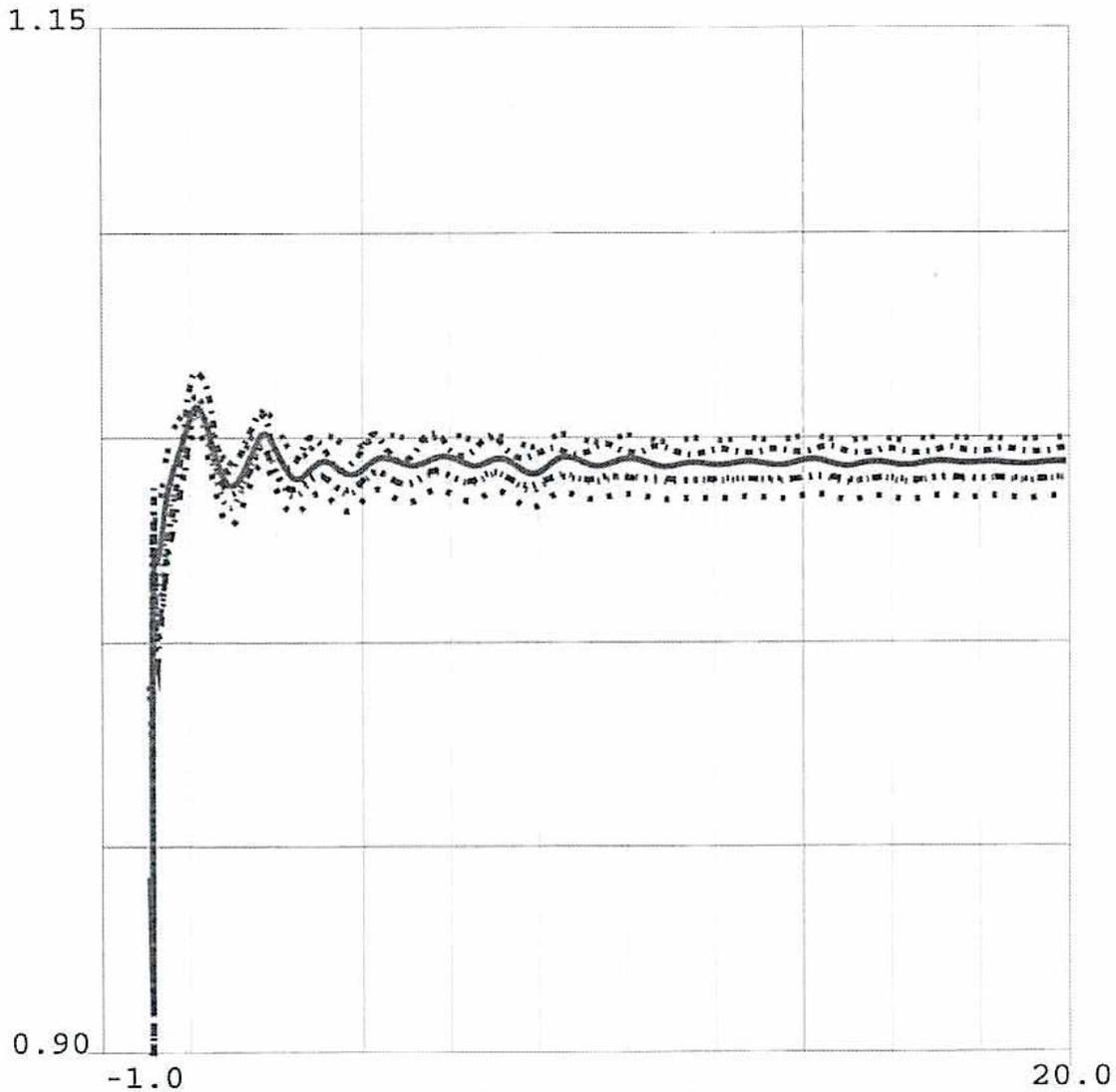
Post-Project Lugo South DLO

Post-Project Serrano North DLO

Post-Project SONGS G-1

Post-Project Valley - Serrano SLO

BUS_VOLT_MAG FOR SCE 500

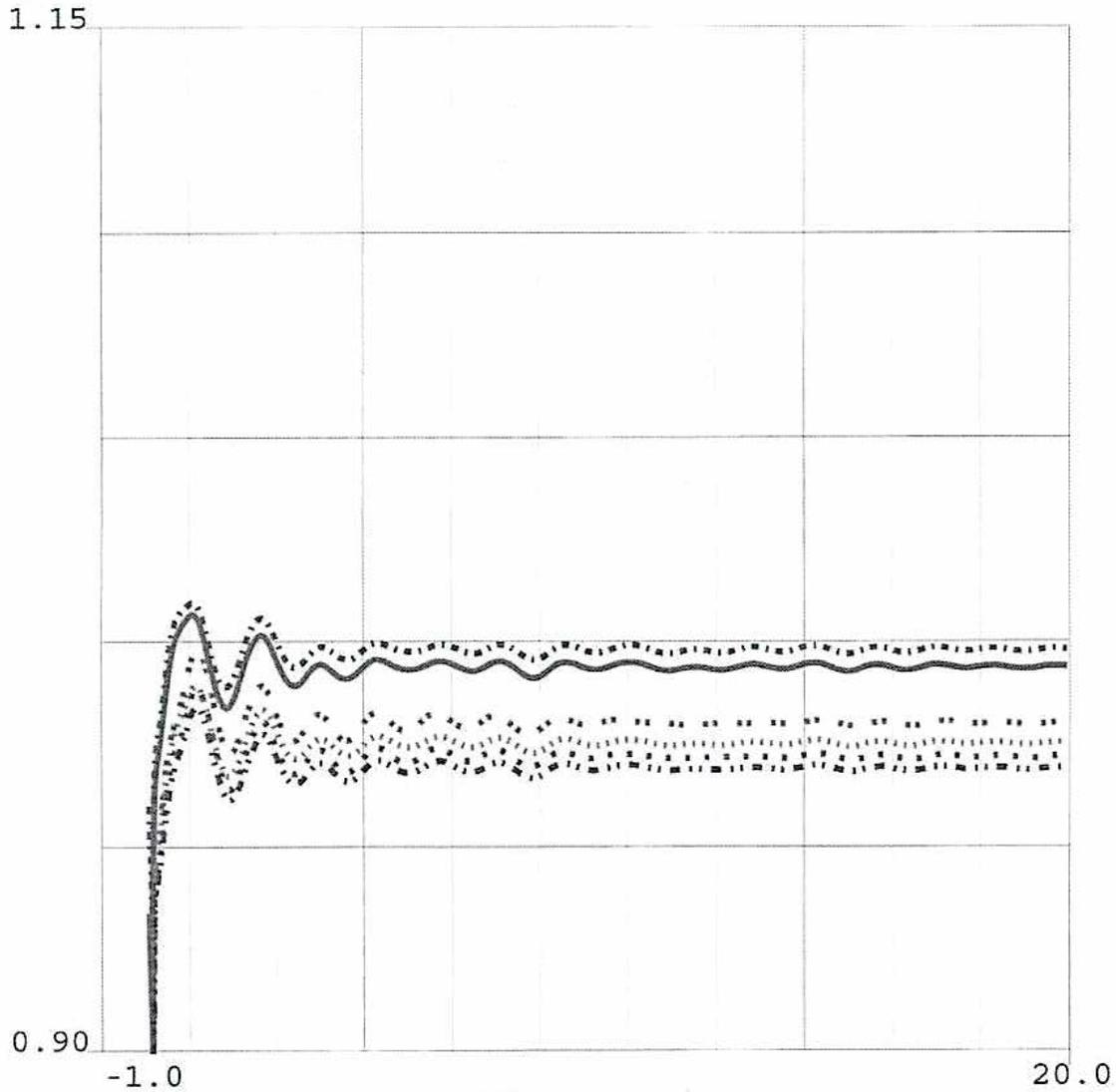


			Time (sec)					
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
... .	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYS	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

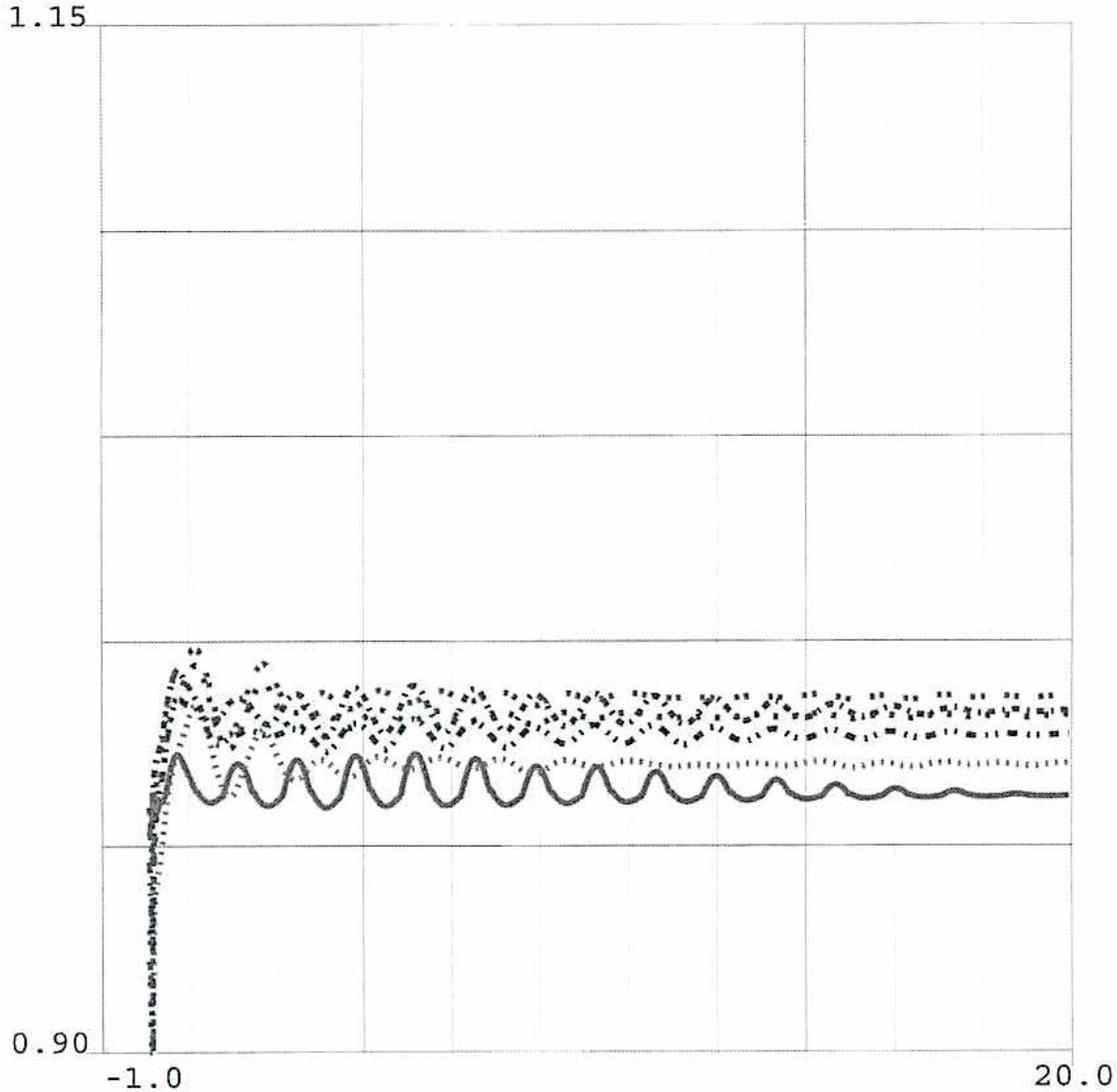


Time (sec)	Bus	ID	Voltage	Phase	Mag	Angle
0.9	vbus	24006	ALMITOSE	230.0	1	1.15
0.9	vbus	24016	BARRE	230.0	1	1.15
0.9	vbus	24025	CHINO	230.0	1	1.15
0.9	vbus	24056	ETIWANDA	230.0	1	1.15
0.9	vbus	24074	LA FRESA	230.0	1	1.15
0.9	vbus	24137	SERRANO	230.0	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019][AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW][N.LUGO 165MW][N.SONGS 1035MW][S.SONGS 1105MW][WOD 4783MW]
 [SYLMAR 513][VIC-LUGO 244][EL-LUGO 789][MHV-LUGO 782][DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

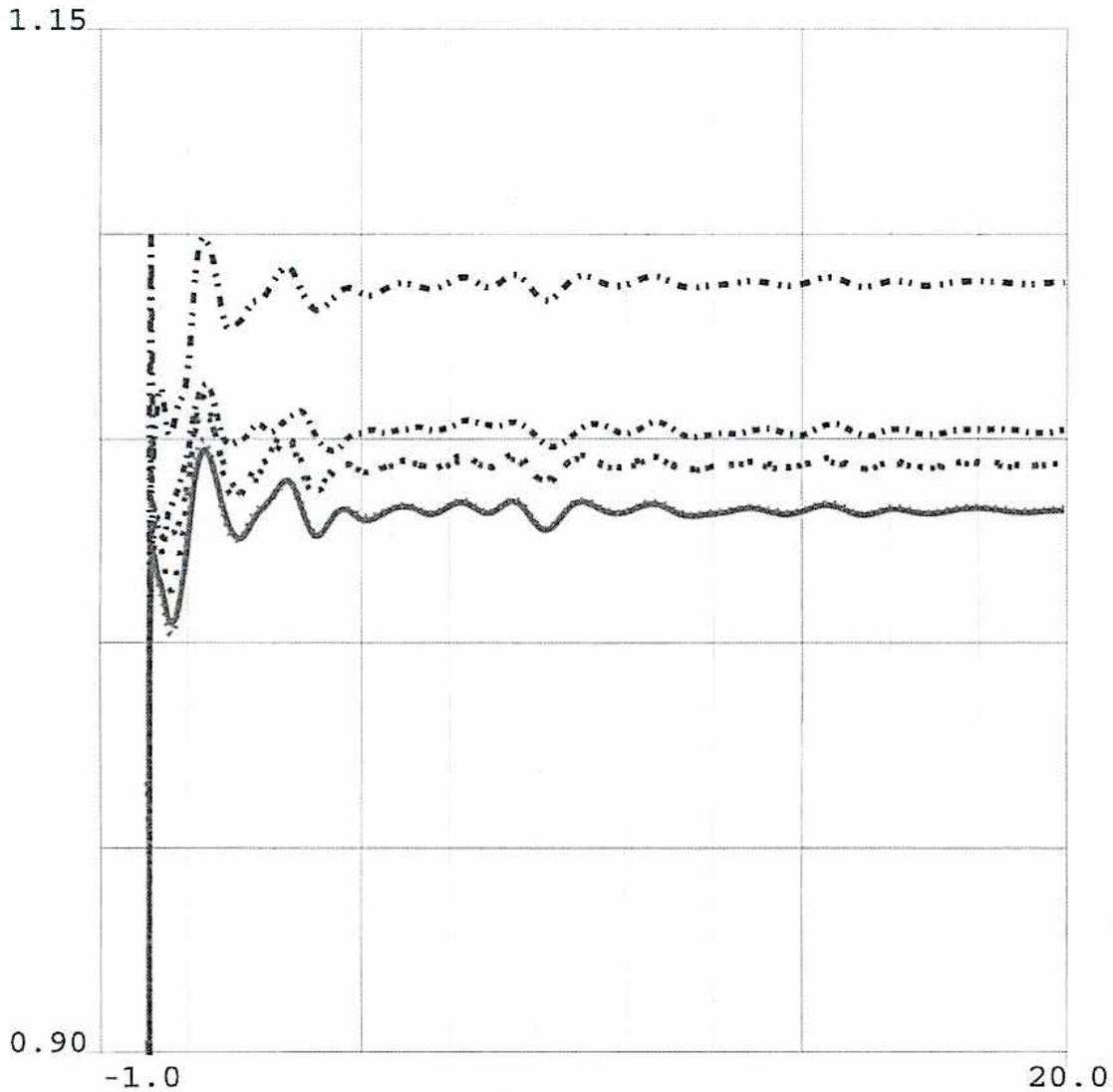


Line	Time (sec)	Bus	ID	V1	V2	V3
—	0.9	vbus	24235	RECTOR	230.0	1 1 1.15
....	0.9	vbus	25201	LEWIS	230.0	1 1 1.15
..	0.9	vbus	24044	ELLIS	230.0	1 1 1.15
..	0.9	vbus	24134	SANTIAGO	230.0	1 1 1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1 1 1.15
---	0.9	vbus	24403	BAILEY	230.0	1 1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 500

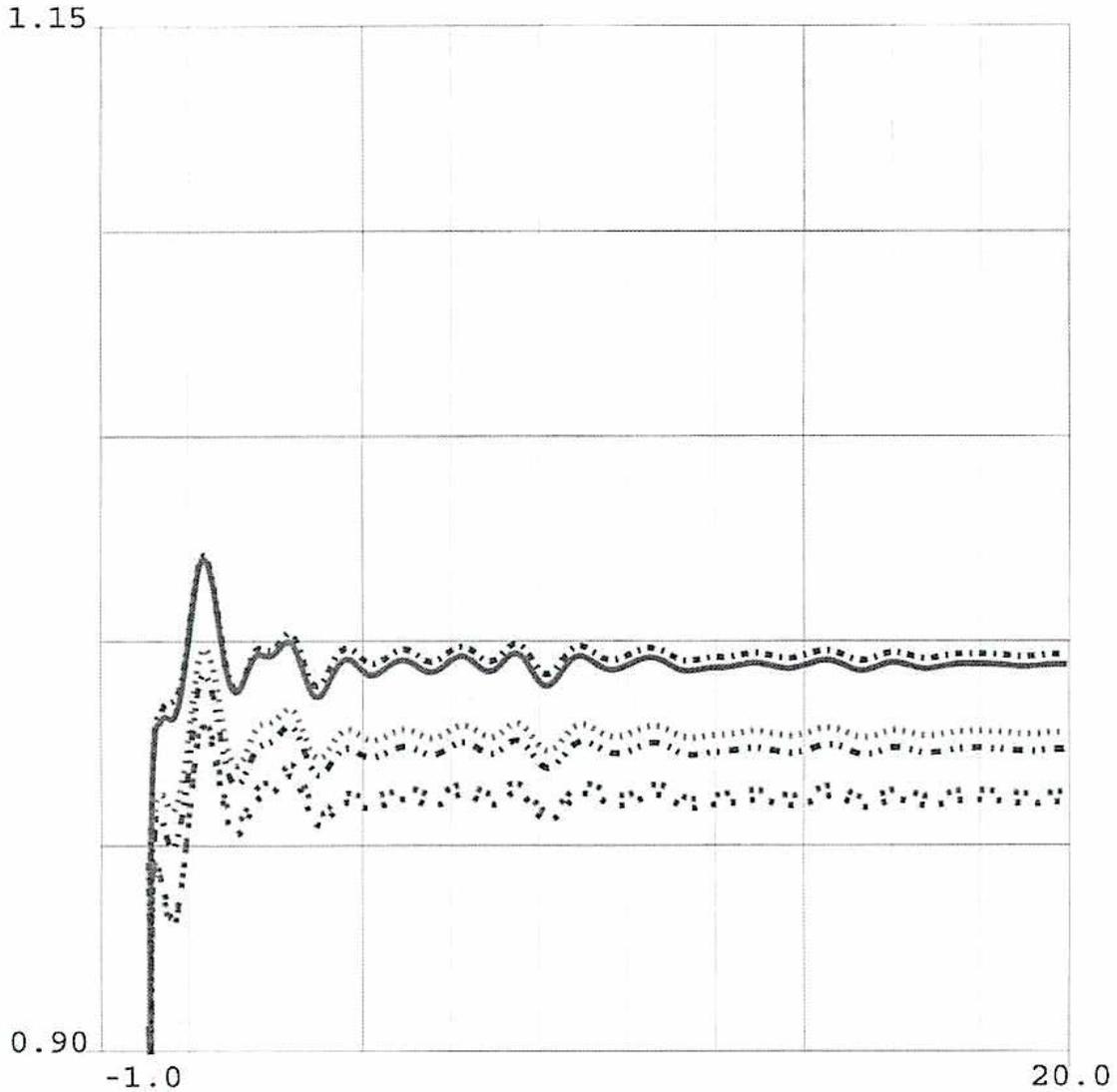


			Time(sec)				
—	0.9	vbus	24086	LUGO	500.0	1	1 1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1 1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1 1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1 1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1 1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

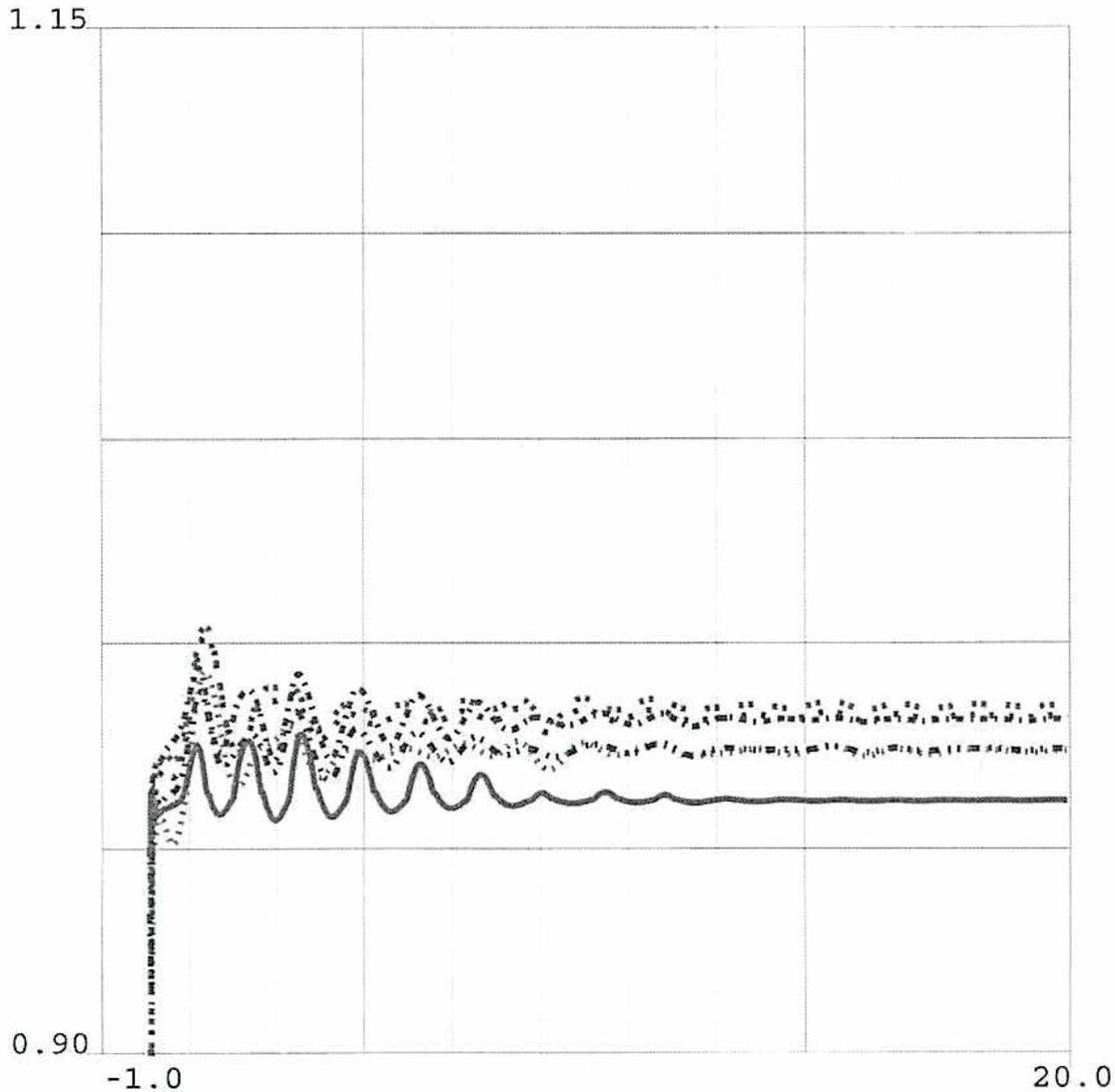


	Time (sec)							
—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
..	0.9	vbus	24025	CHINO	230.0	1	1	1.15
..	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA] MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691] MW



BUS_VOLT_MAG FOR SCE 230 Part 2

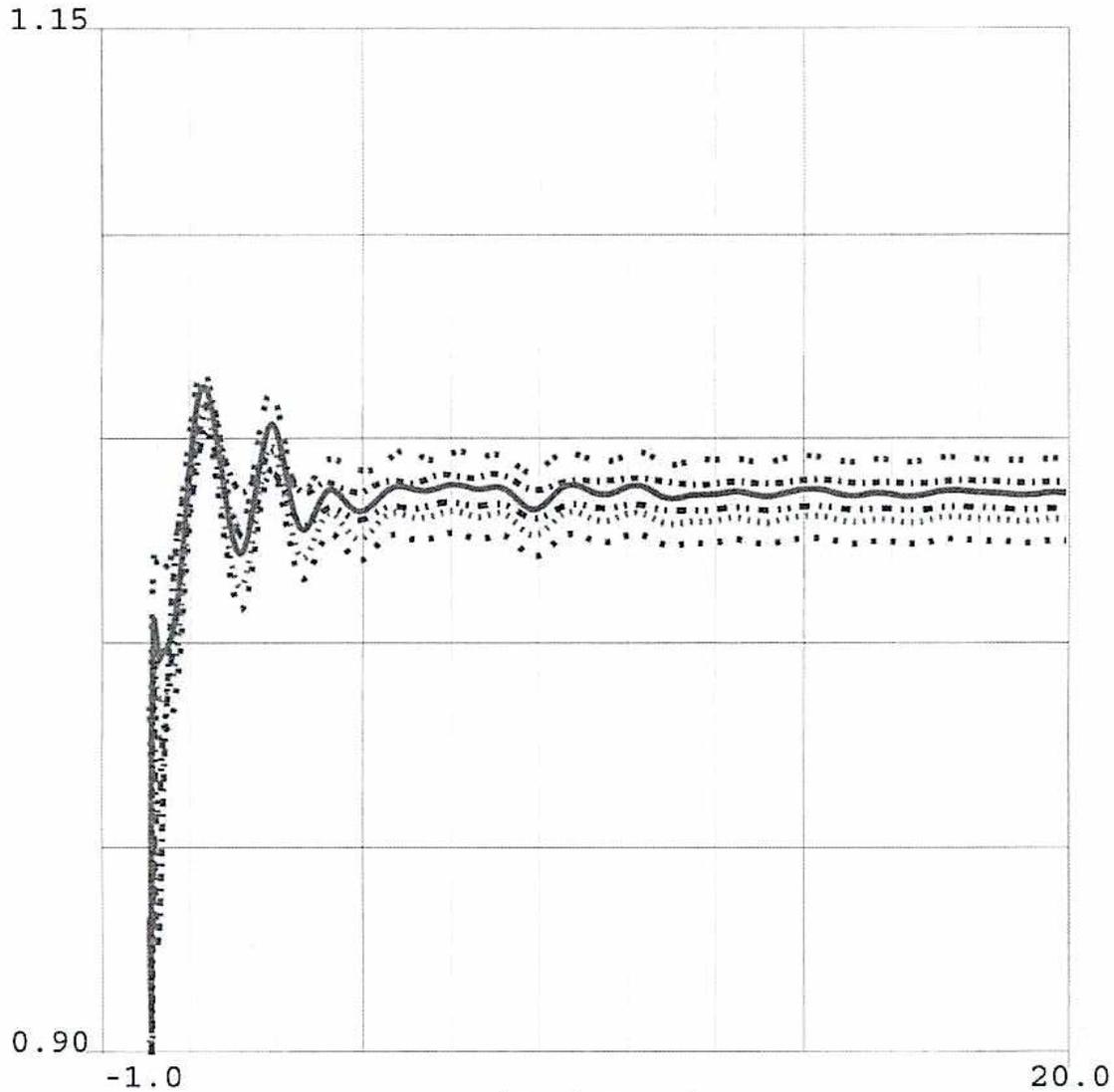


			Time(sec)					
—	0.9	vbus	24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1	1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 500

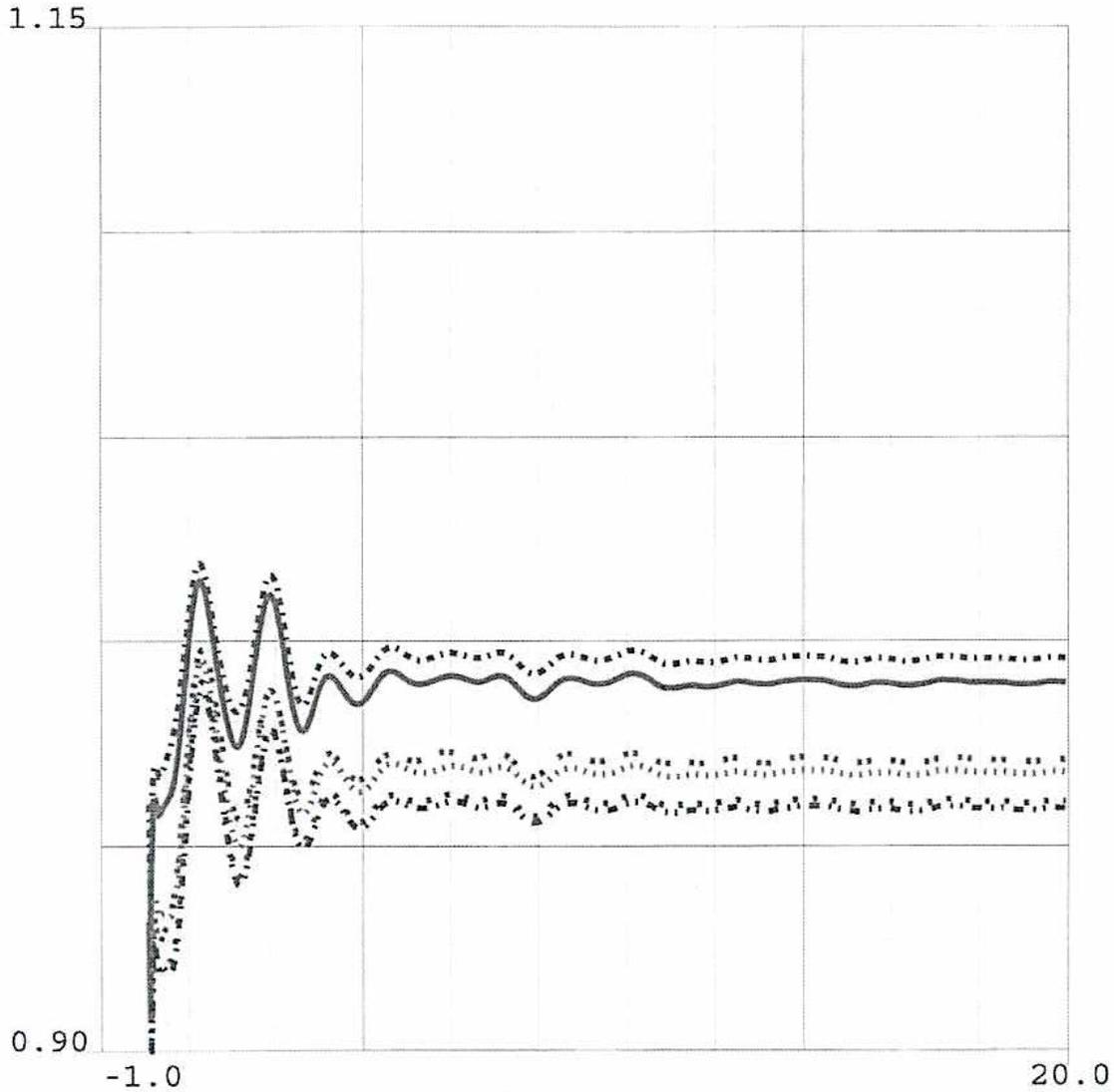


			Time (sec)					
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

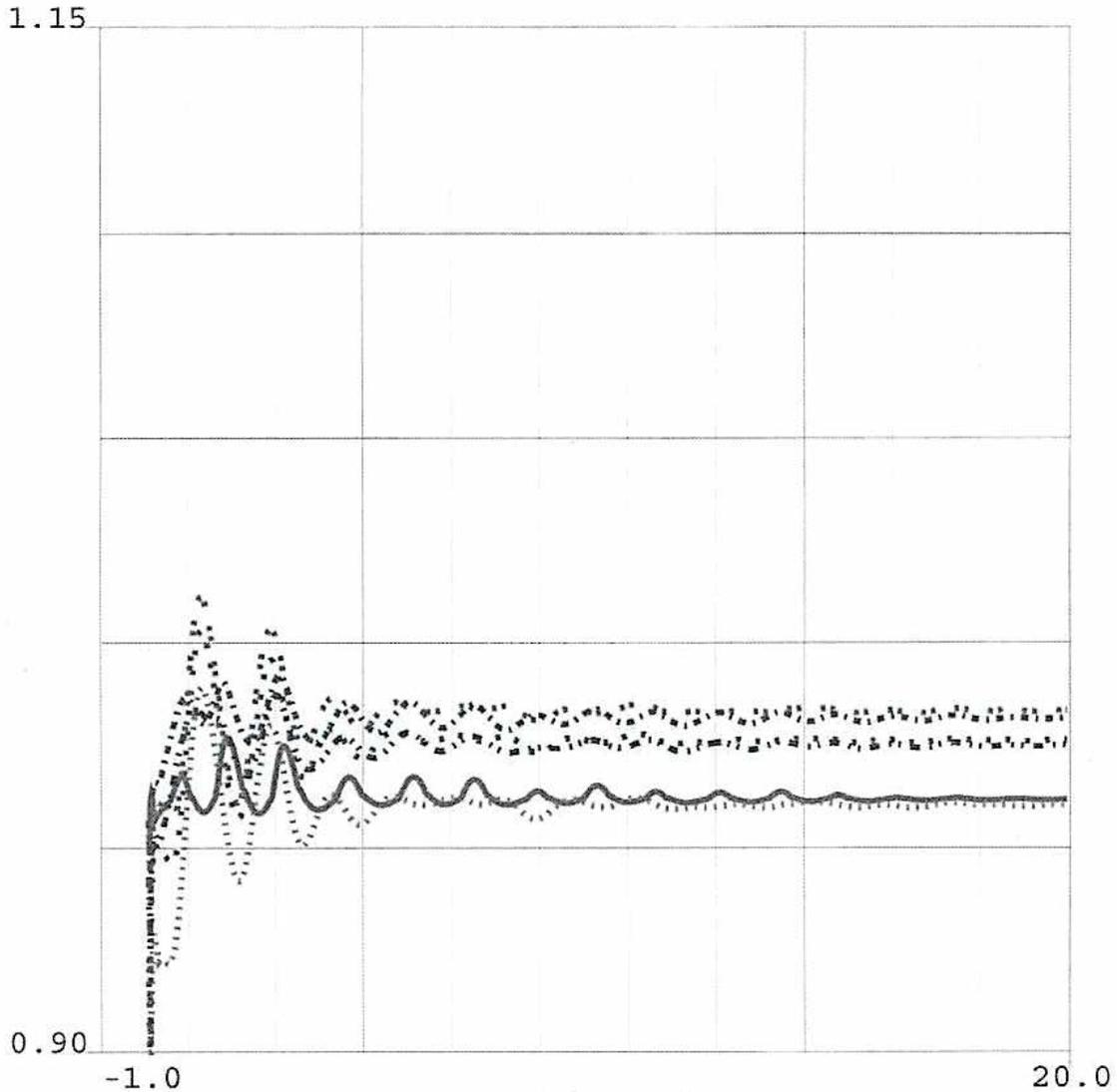


			Time(sec)				
—	0.9	vbus	24006	ALMITOSE	230.0	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1.15
..	0.9	vbus	24025	CHINO	230.0	1	1.15
..	0.9	vbus	24056	ETIWANDA	230.0	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

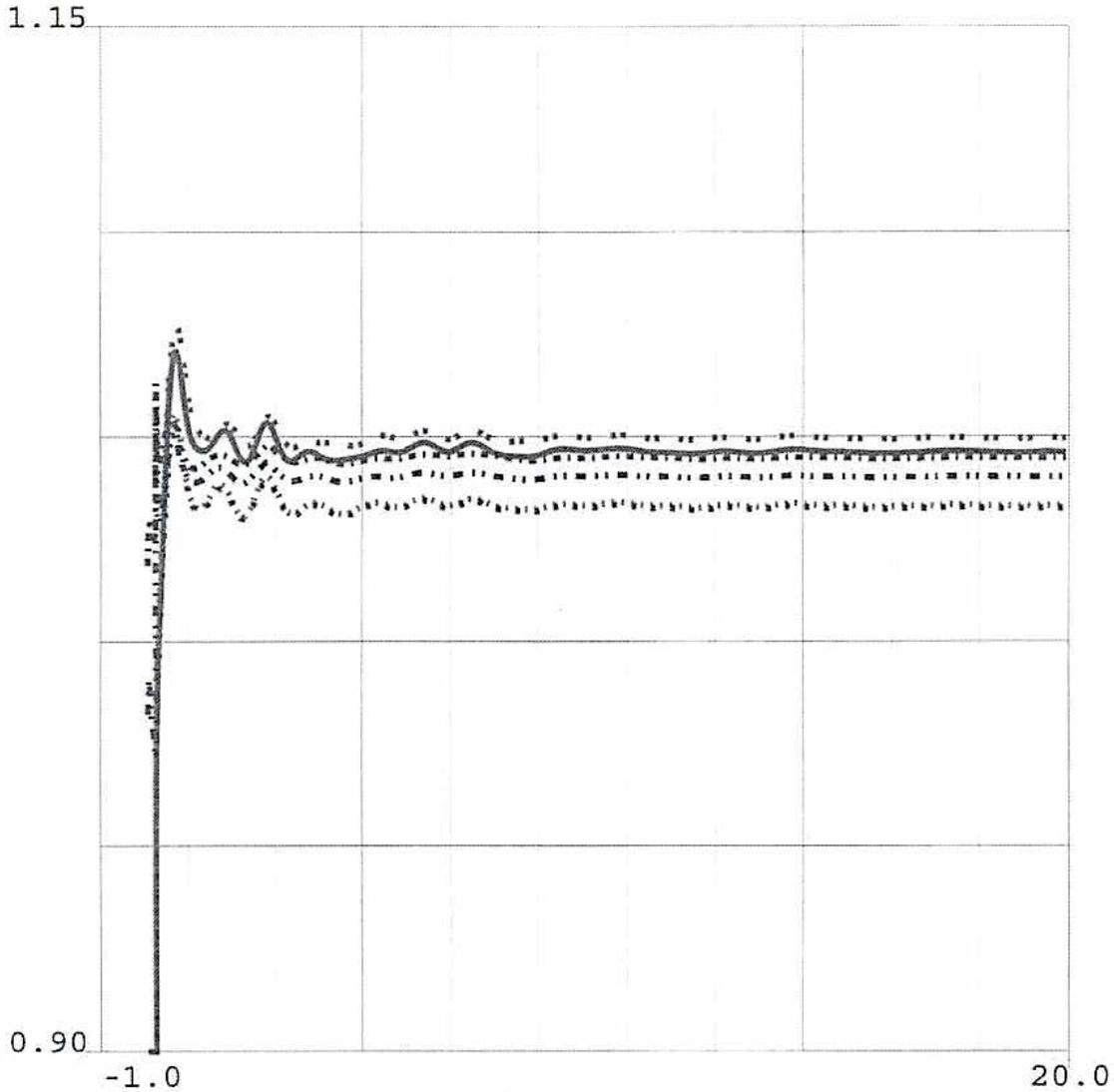


			Time(sec)					
—	0.9	vbus	24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1	1.15
..	0.9	vbus	24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 500

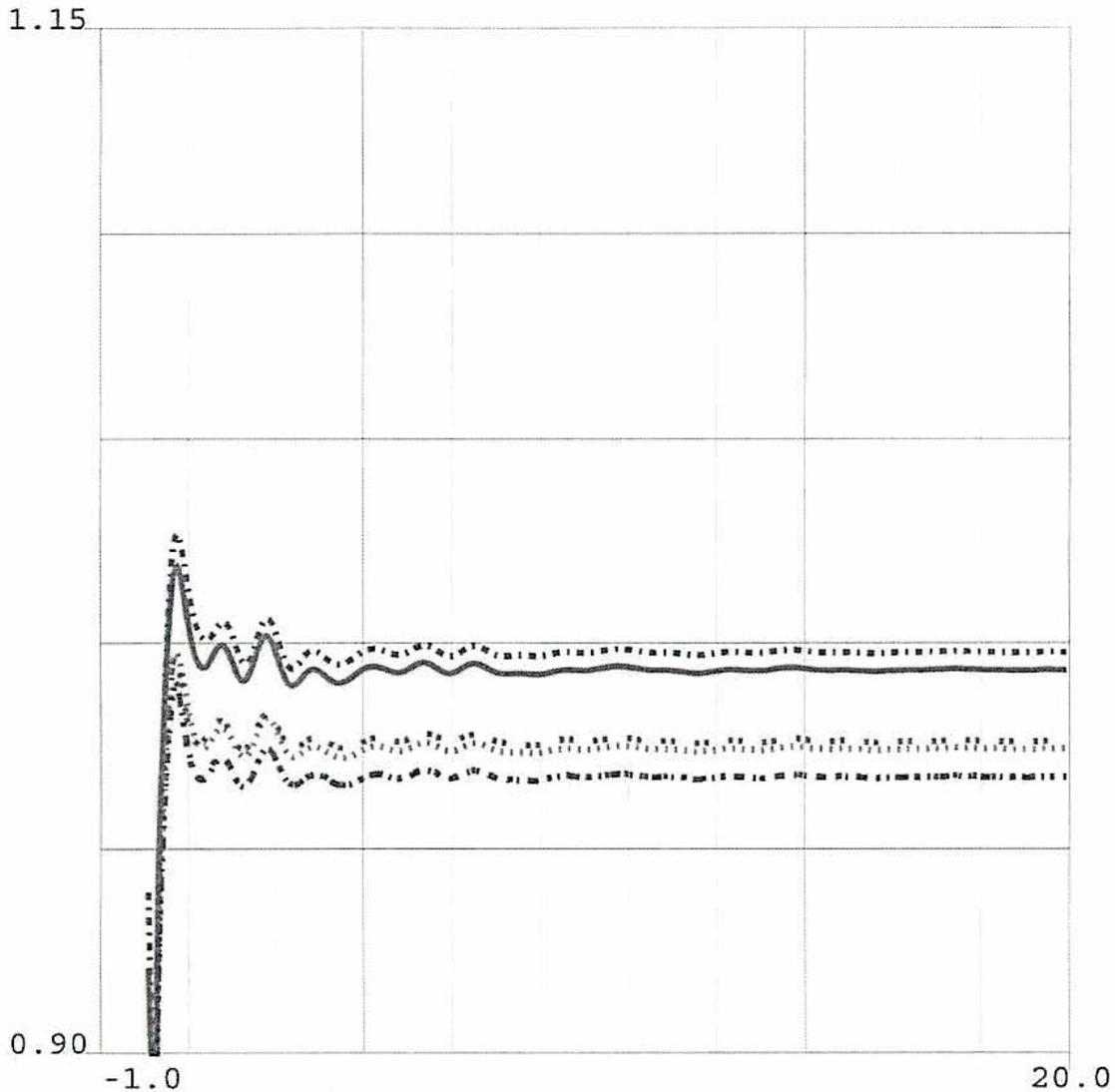


Line Style	Bus ID	Bus No	Bus Name	Capacity (MW)	Phase 1	Phase 2	Phase 3	
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
...	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
...	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYS	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

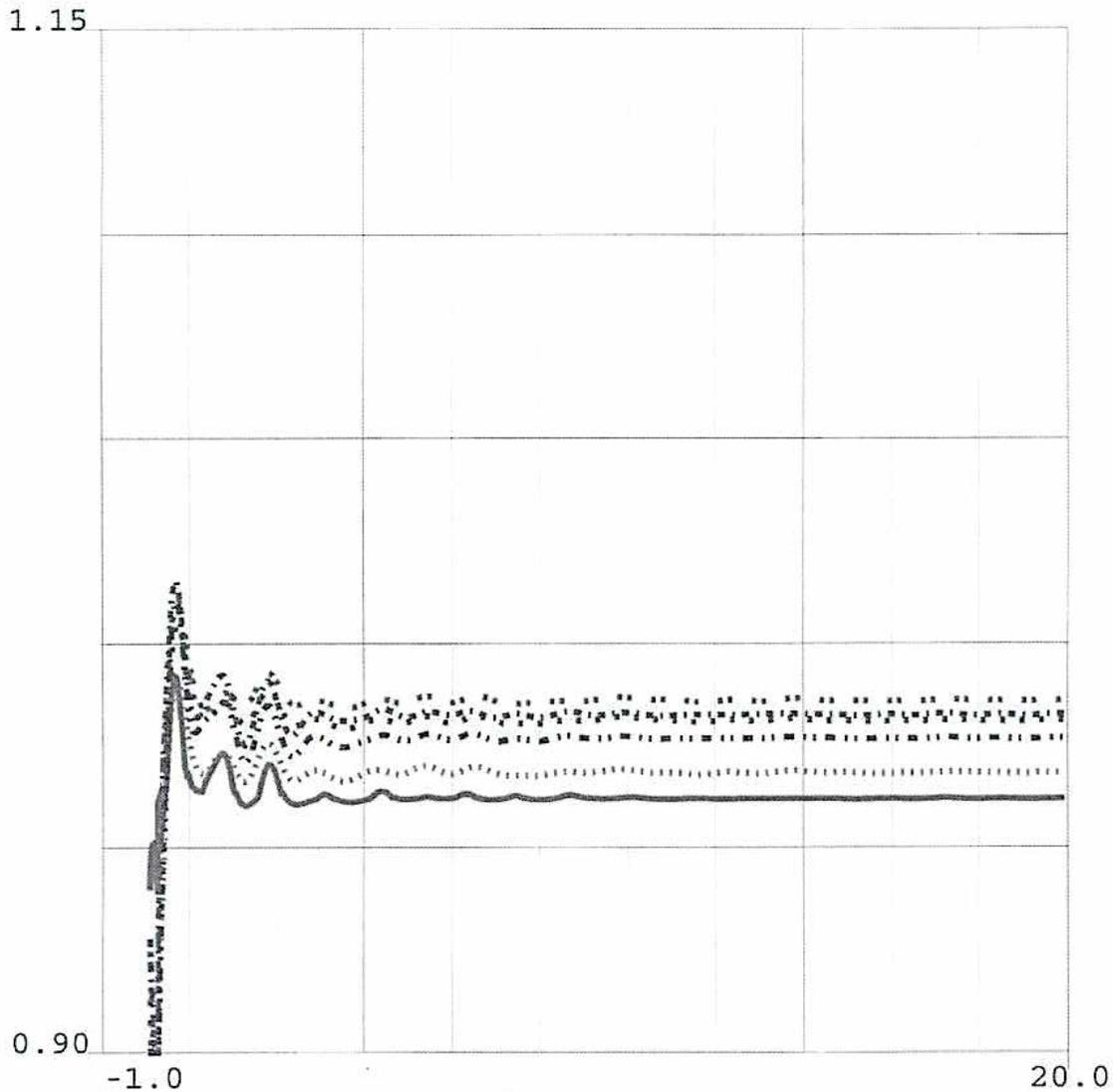


	Time (sec)							
—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
..	0.9	vbus	24025	CHINO	230.0	1	1	1.15
..	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA] MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691] MW



BUS_VOLT_MAG FOR SCE 230 Part 2

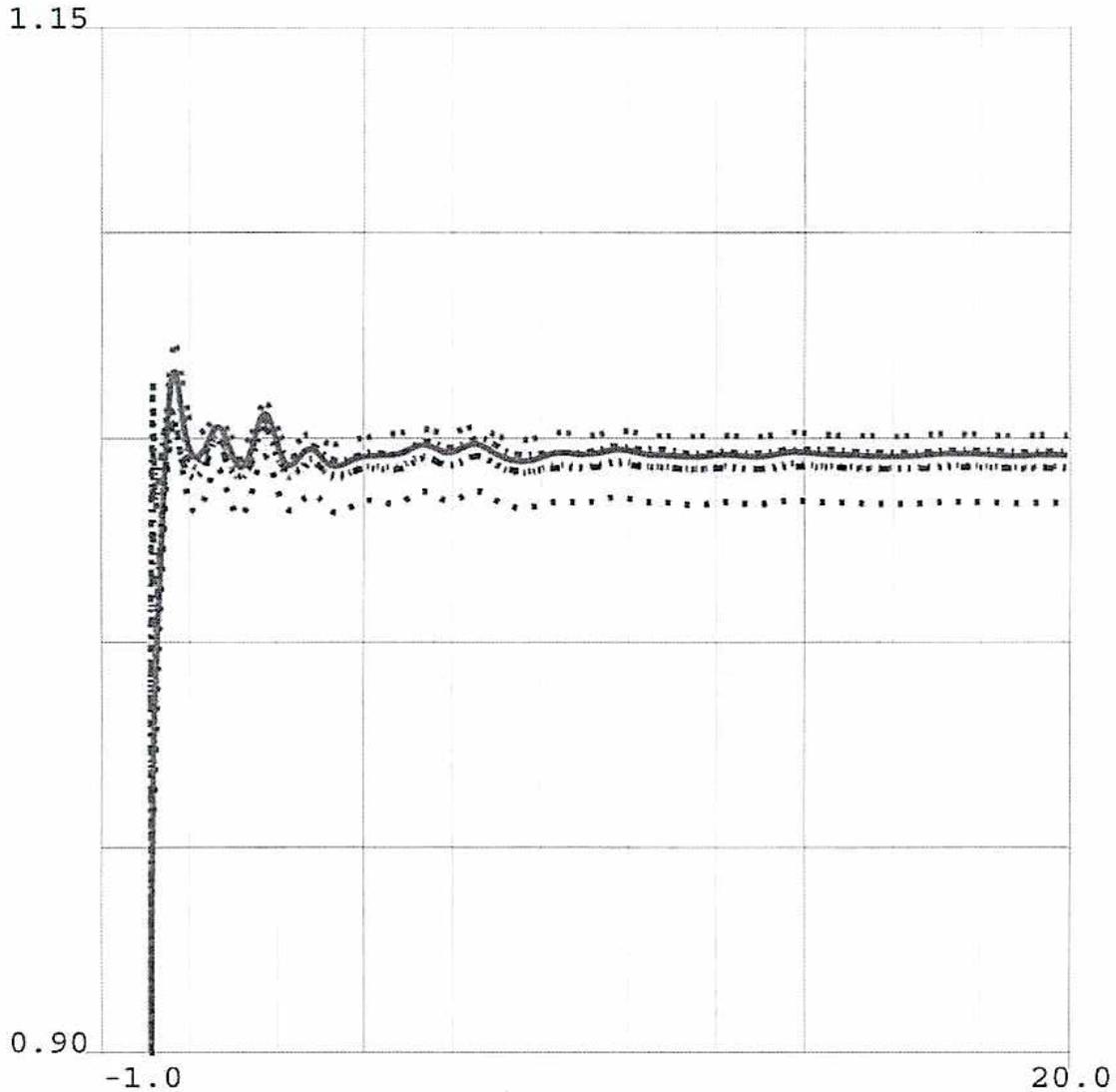


			Time(sec)					
—	0.9	vbus	24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1	1.15
..	0.9	vbus	24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 500

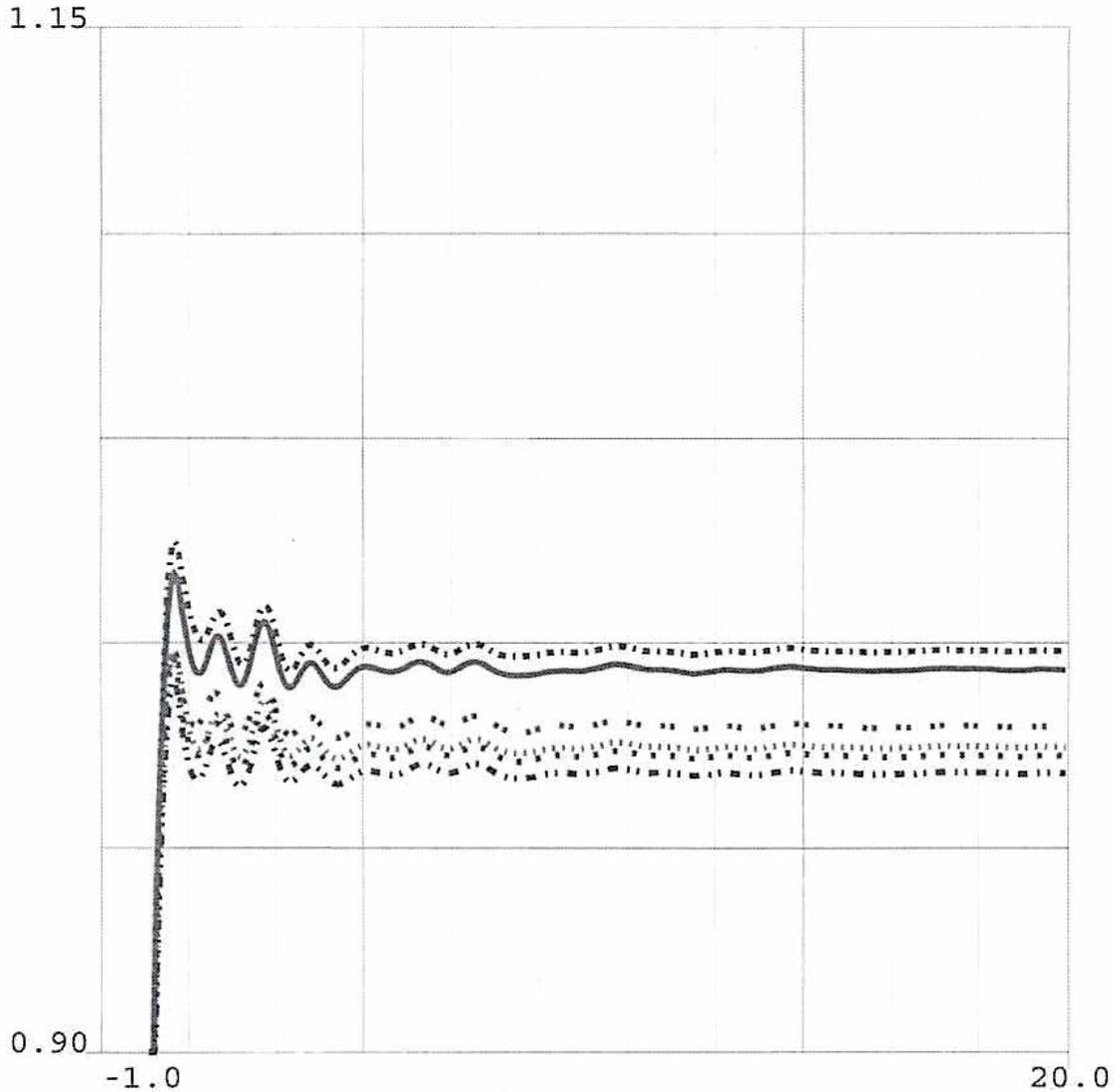


			Time (sec)					
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
...	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
...	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYS	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

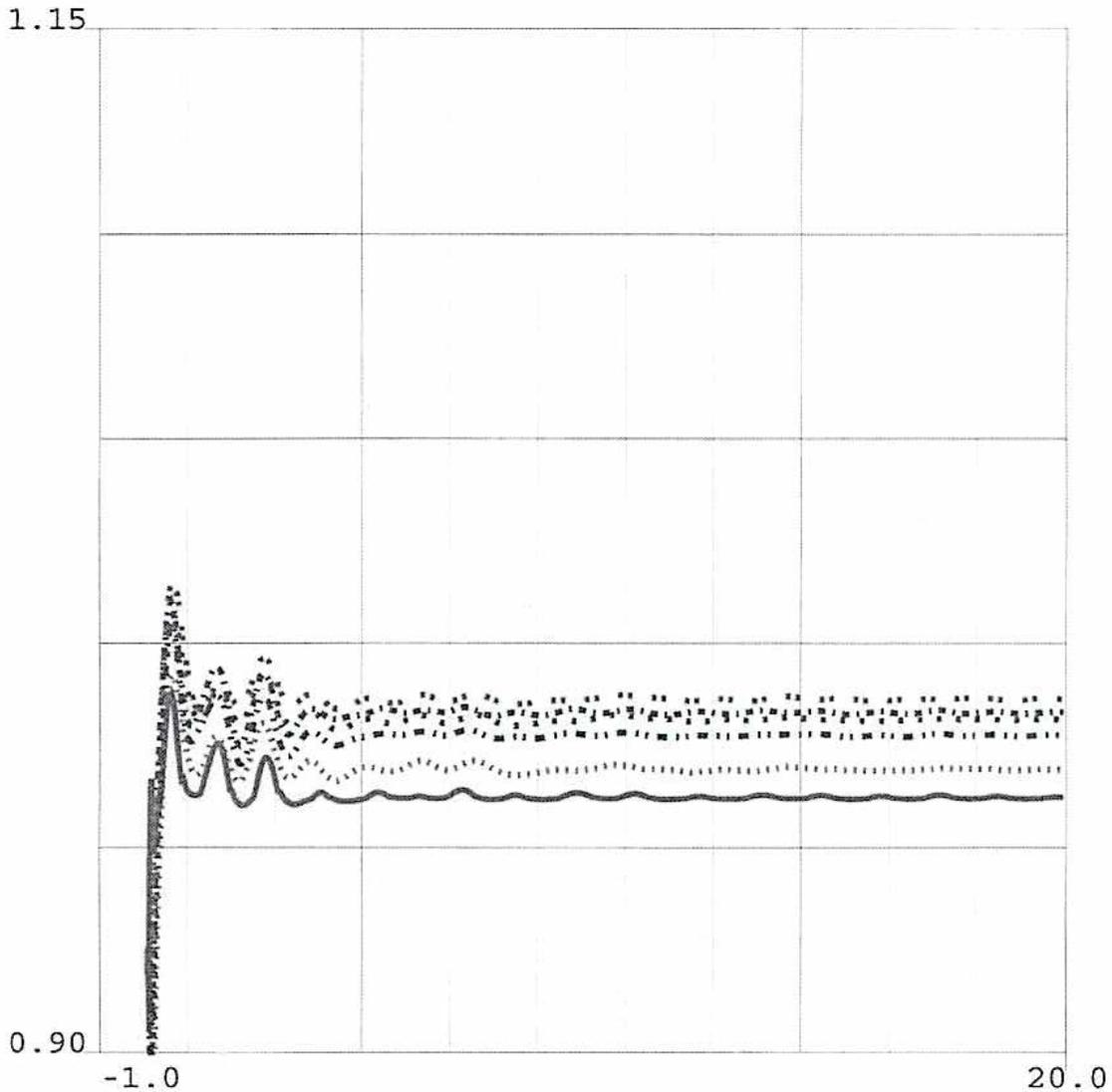


	Time (sec)						
—	0.9	vbus	24006	ALMITOSE	230.0	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1.15
..	0.9	vbus	24025	CHINO	230.0	1	1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

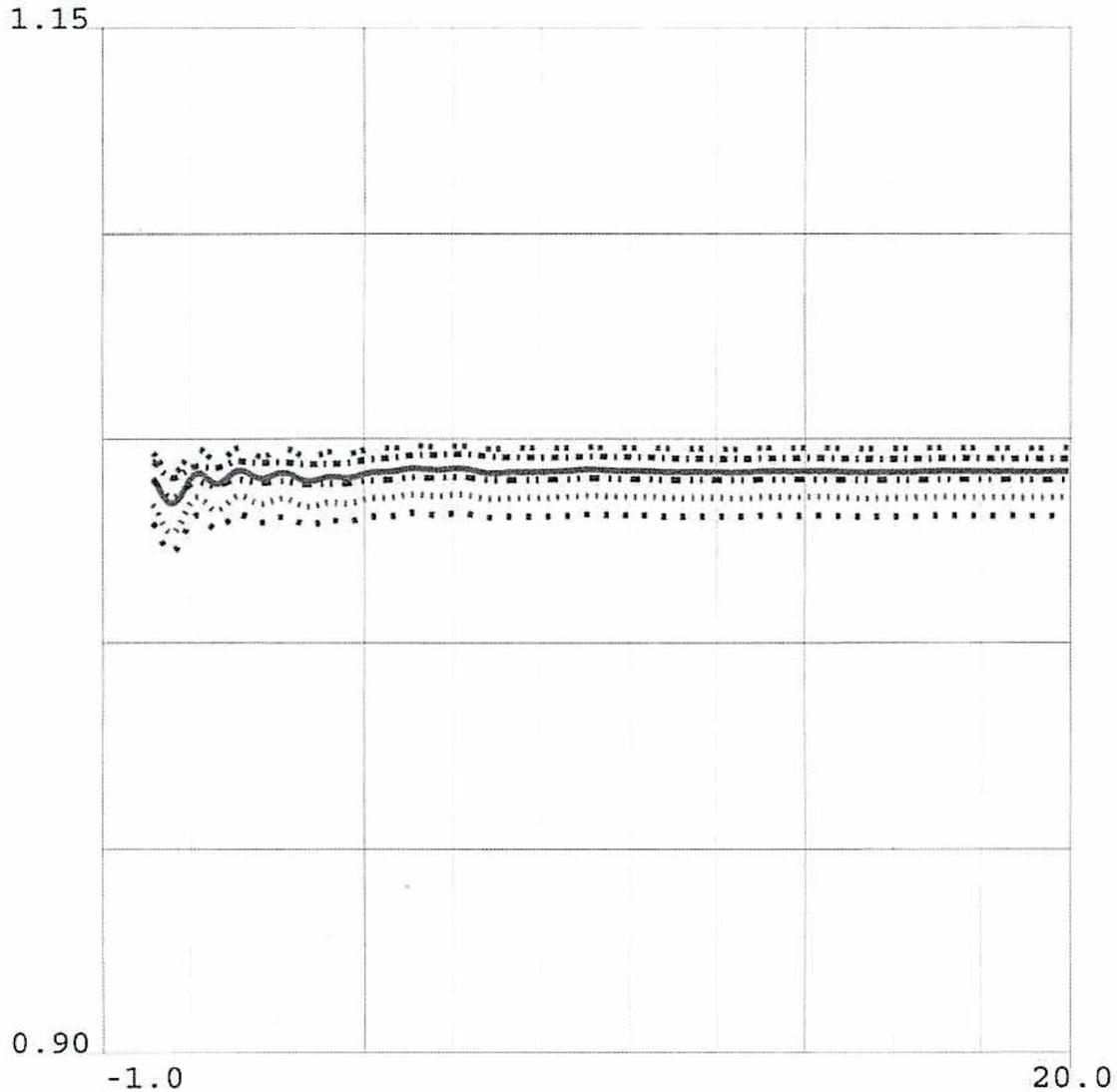


			Time (sec)					
—	0.9	vbus	24235	RECTOR	230.0	1	1	1.15
...	0.9	vbus	25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1	1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 500

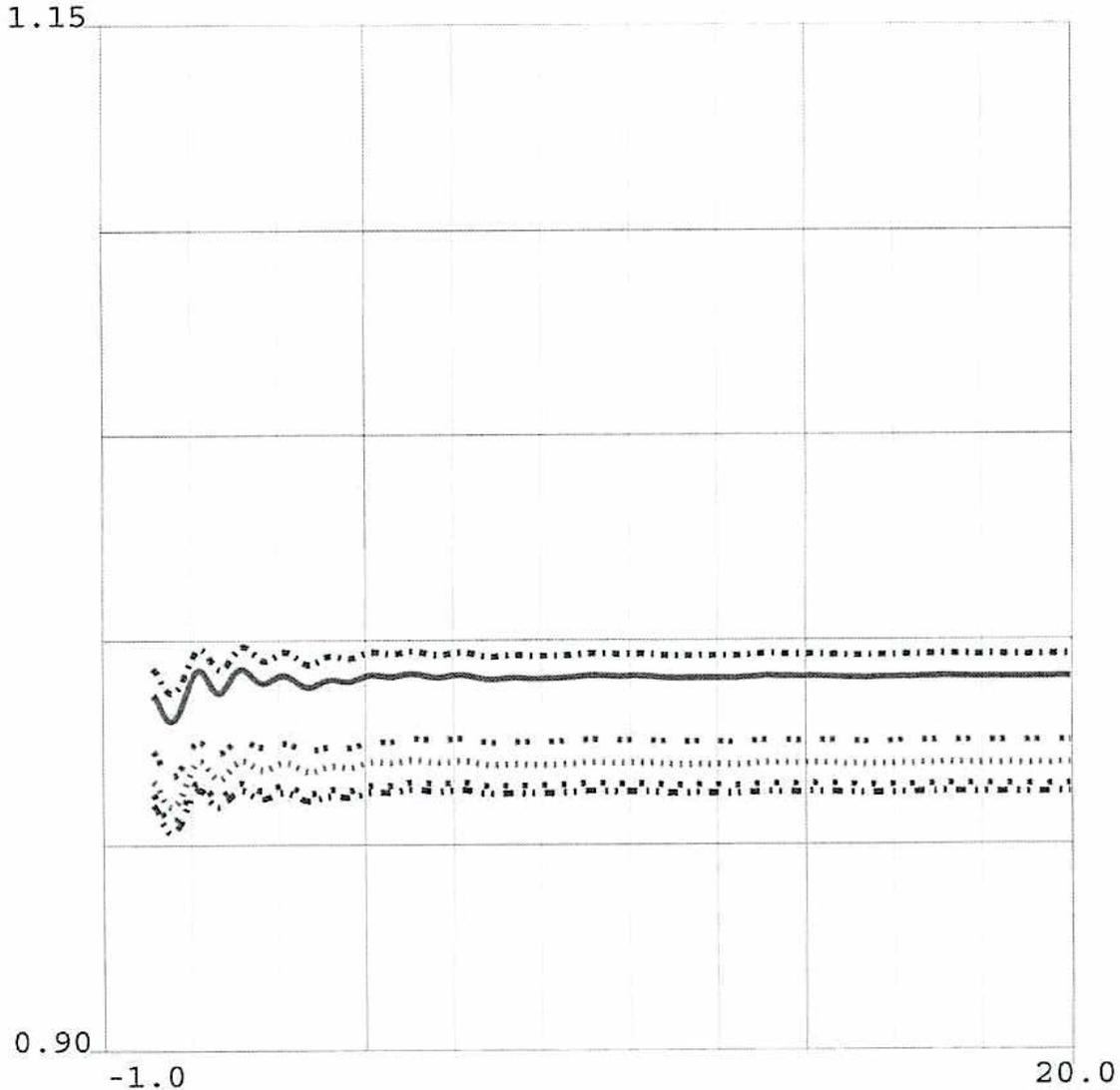


			Time(sec)					
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

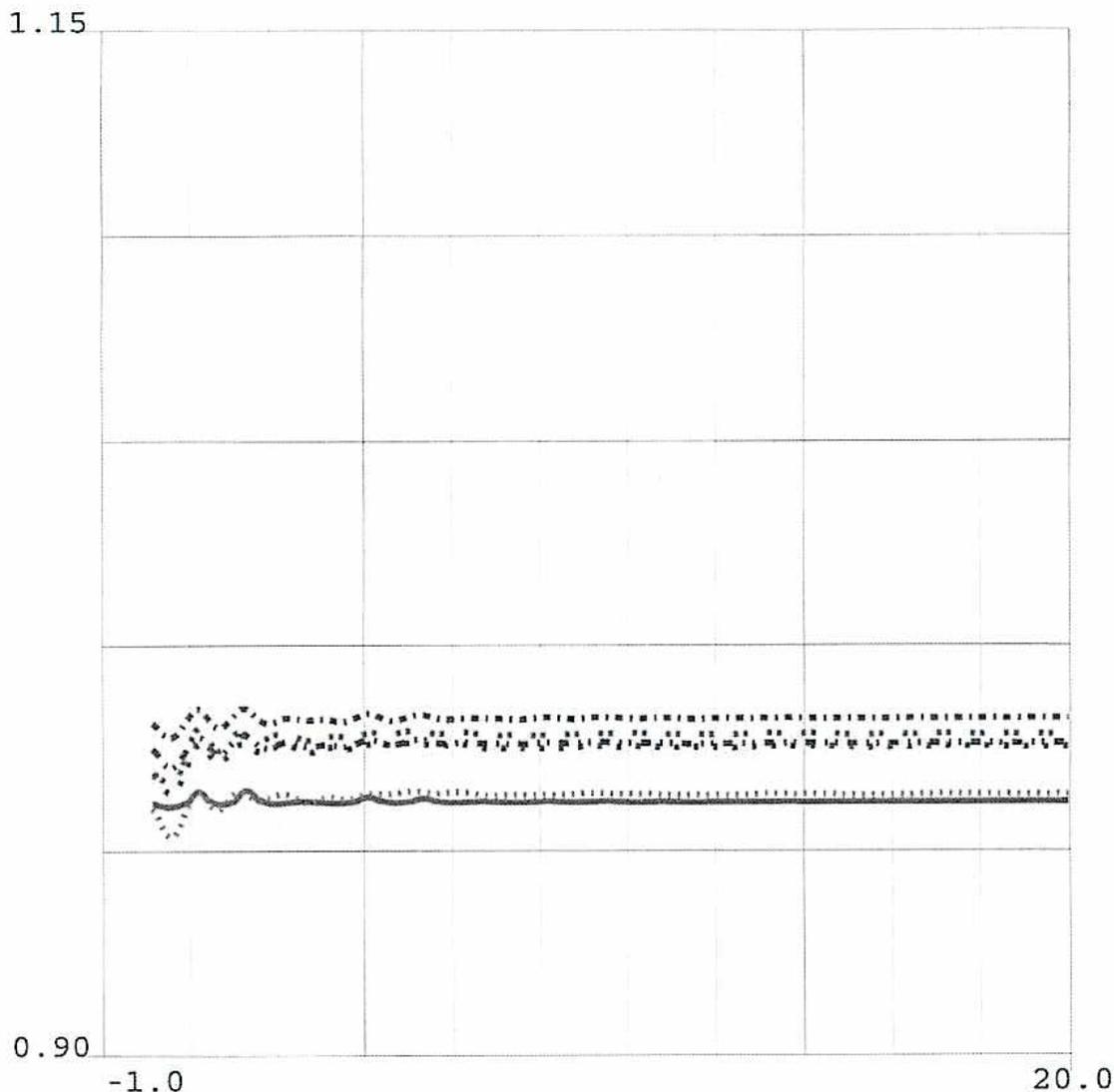


			Time(sec)				
—	0.9	vbus	24006	ALMITOSE	230.0	1	1 1.15
....	0.9	vbus	24016	BARRE	230.0	1	1 1.15
--	0.9	vbus	24025	CHINO	230.0	1	1 1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1 1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1 1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

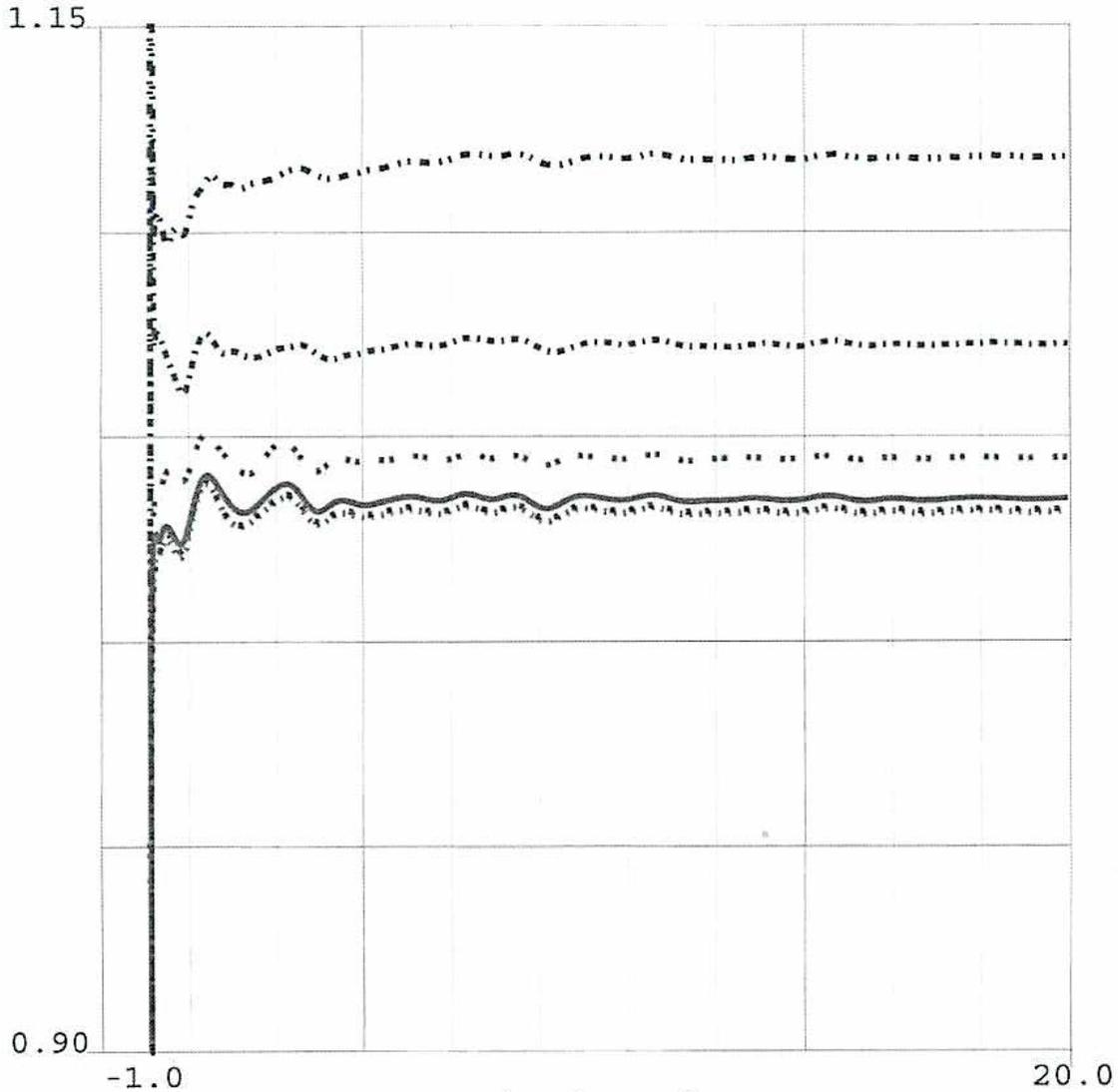


			Time(sec)				
—	0.9	vbus	24235	RECTOR	230.0	1	1 1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1 1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1 1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1 1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1 1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 500

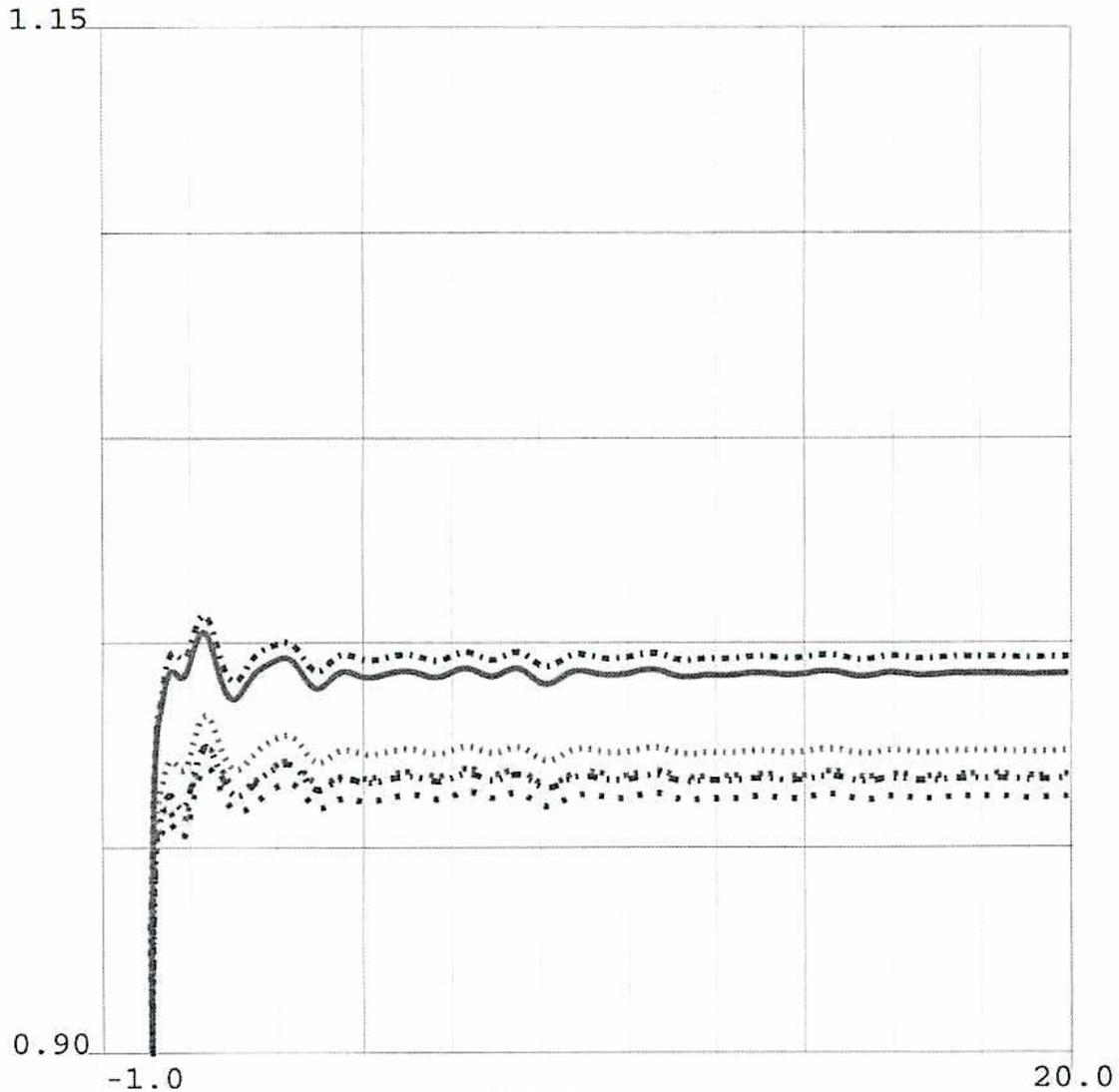


Line Style	Bus ID	Bus Name	Capacity (MW)	Phase	Count	Steady-State Voltage
—	0.9 vbus 24086	LUGO	500.0	1	1	1.15
....	0.9 vbus 24092	MIRALOMA	500.0	1	1	1.15
..	0.9 vbus 24138	SERRANO	500.0	1	1	1.15
..	0.9 vbus 24156	VINCENT	500.0	1	1	1.15
---	0.9 vbus 24801	DEVERS	500.0	1	1	1.15
---	0.9 vbus 24151	VALLEYS	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA] MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691] MW



BUS_VOLT_MAG FOR SCE 230 Part 1

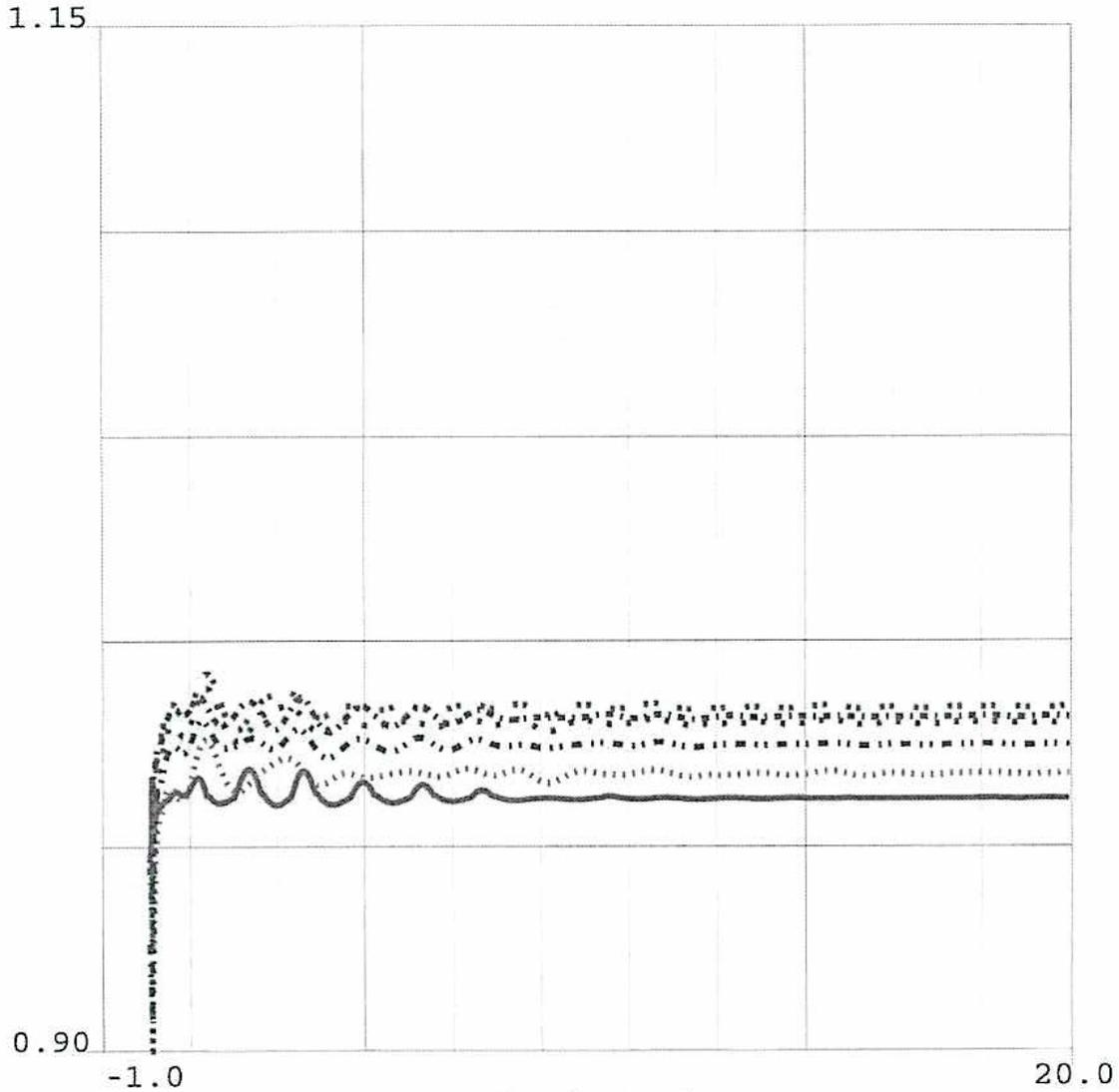


			Time(sec)				
—	0.9	vbus	24006	ALMITOSE	230.0	1	1 1.15
....	0.9	vbus	24016	BARRE	230.0	1	1 1.15
..	0.9	vbus	24025	CHINO	230.0	1	1 1.15
---	0.9	vbus	24056	ETIWANDA	230.0	1	1 1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1 1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

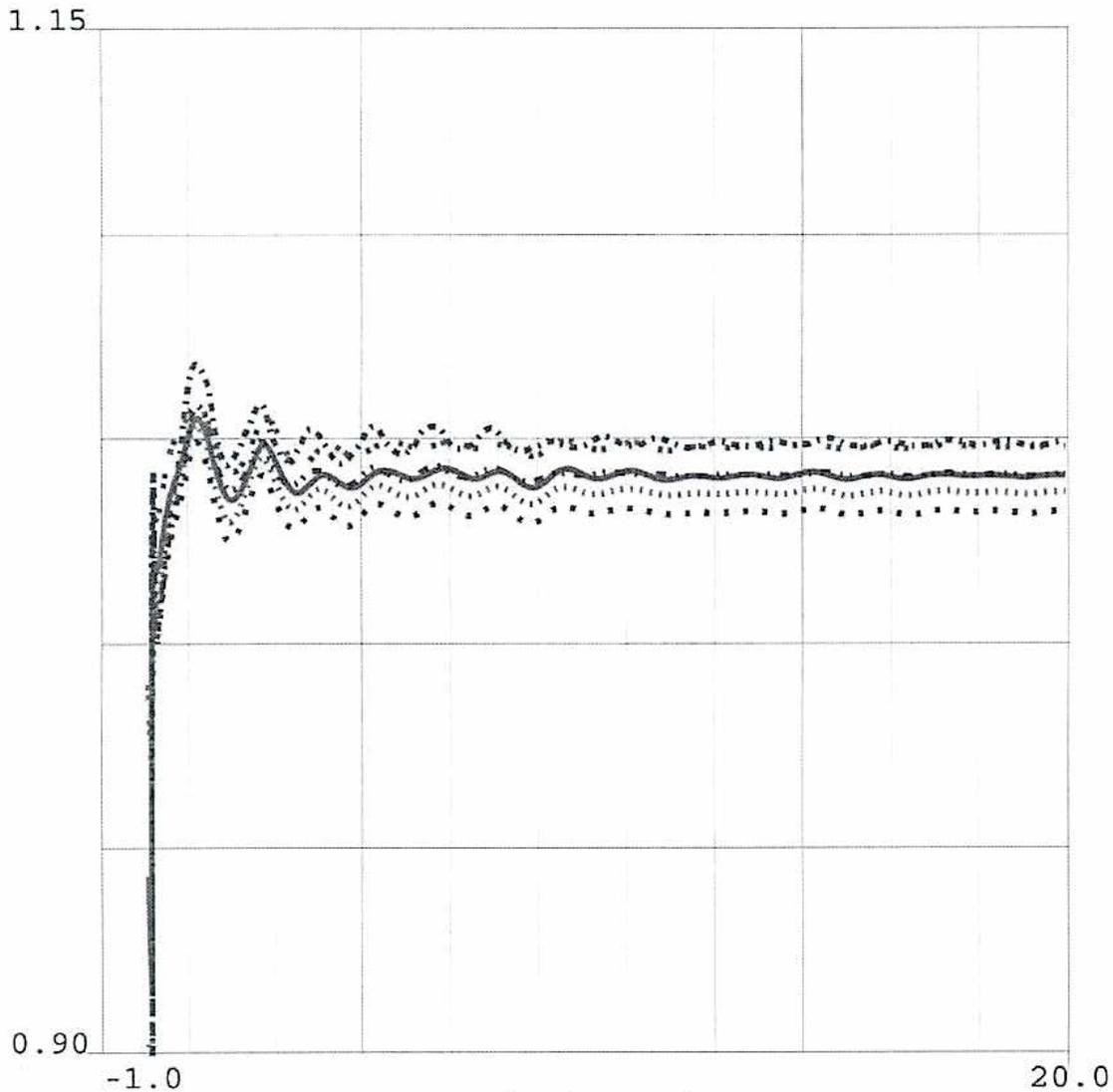


			Time(sec)				
—	0.9	vbus	24235	RECTOR	230.0	1	1 1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1 1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1 1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1 1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1 1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Pre Project)
 SCE [LOAD 22964 XCHGE -7091 GEN 17019] [AA 2226V 1123M 989D 1498VA]MW
 [S.LUGO 545MW] [N.LUGO 165MW] [N.SONGS 1035MW] [S.SONGS 1105MW] [WOD 4783MW]
 [SYLMAR 513] [VIC-LUGO 244] [EL-LUGO 789] [MHV-LUGO 782] [DV IMPORT 3691]MW



BUS_VOLT_MAG FOR SCE 500

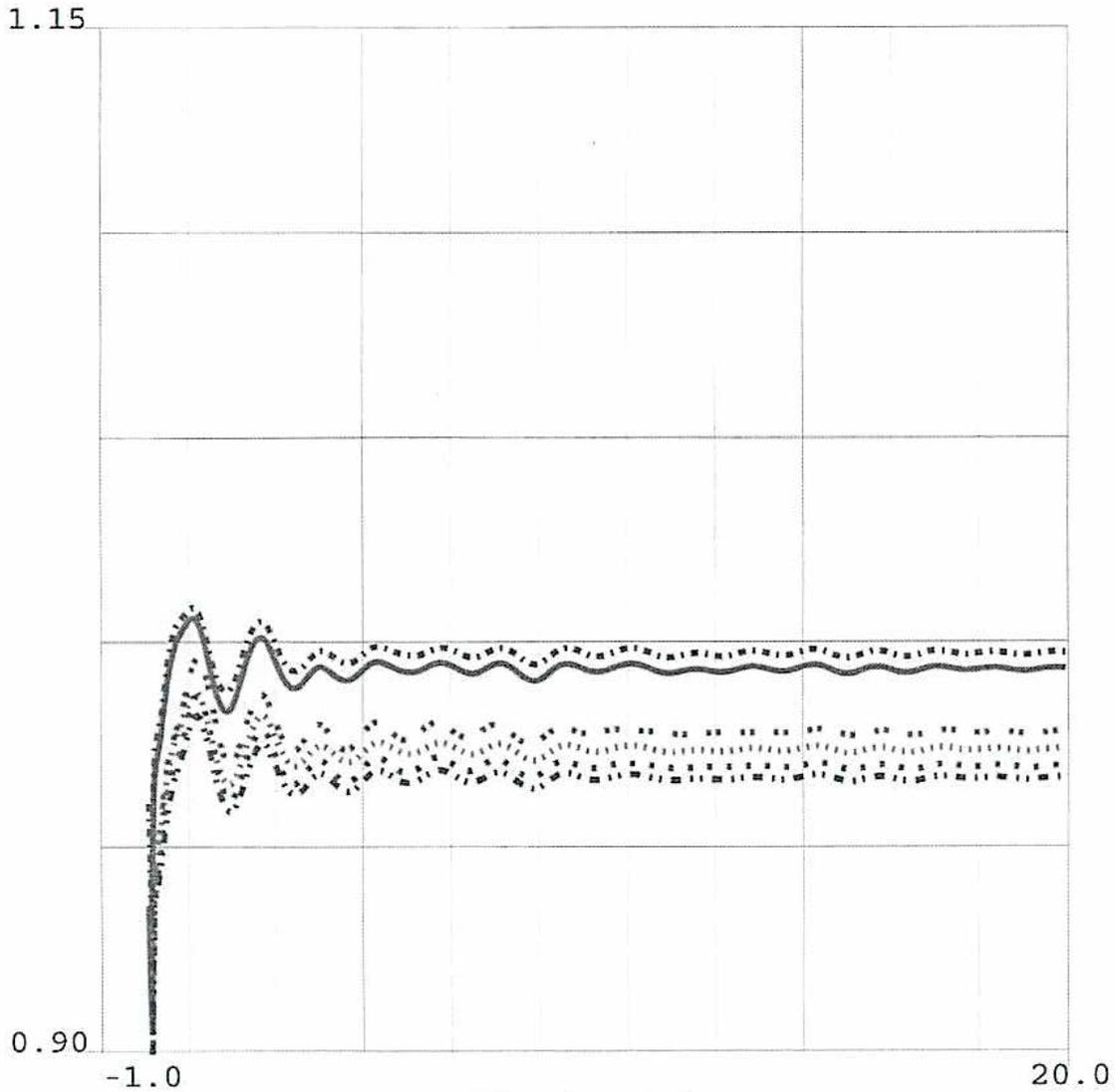


			Time (sec)				
—	0.9	vbus	24086	LUGO	500.0	1	1 1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1 1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1 1.15
...	0.9	vbus	24156	VINCENT	500.0	1	1 1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1 1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

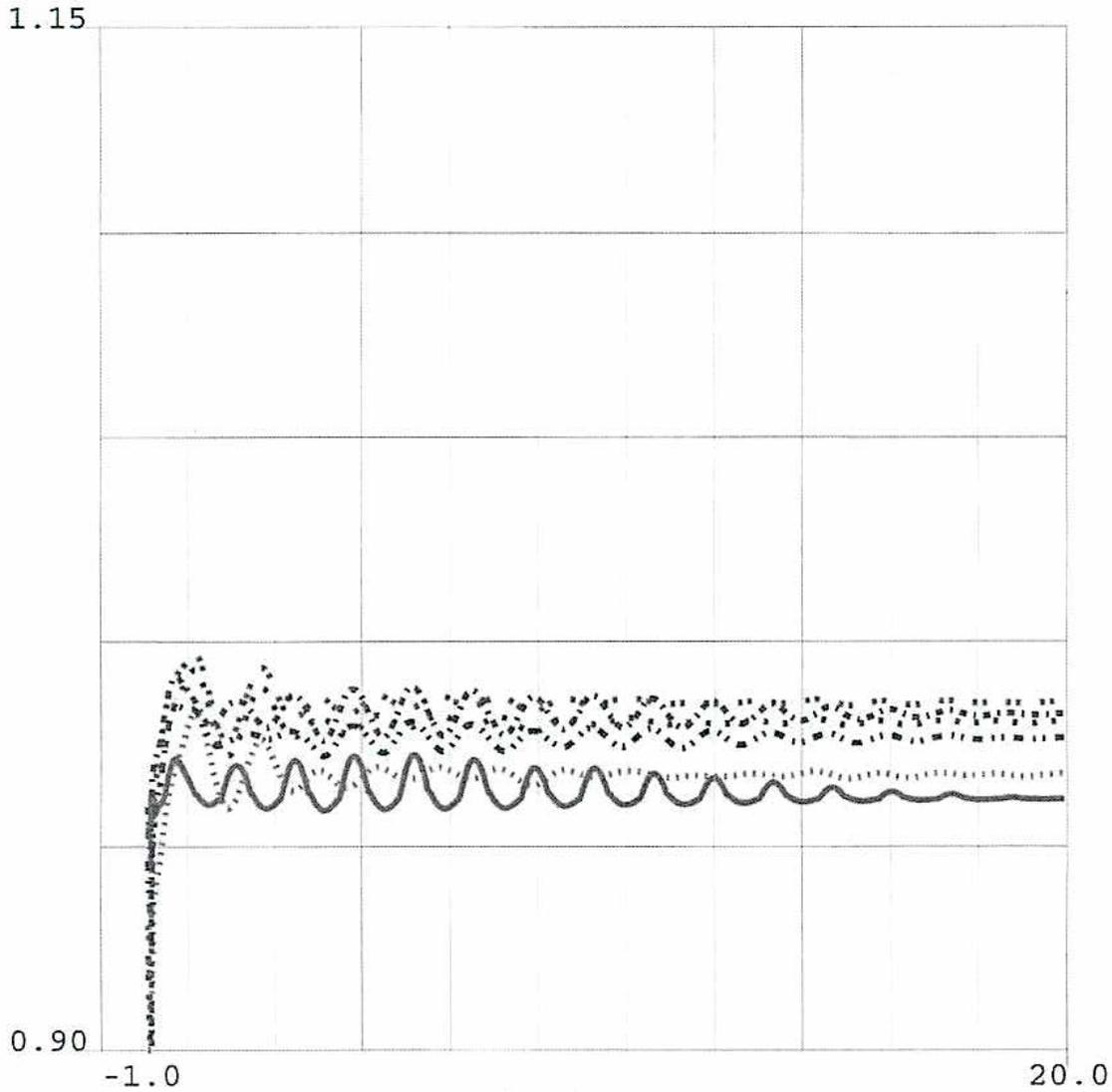


			Time(sec)					
—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
--	0.9	vbus	24025	CHINO	230.0	1	1	1.15
..	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

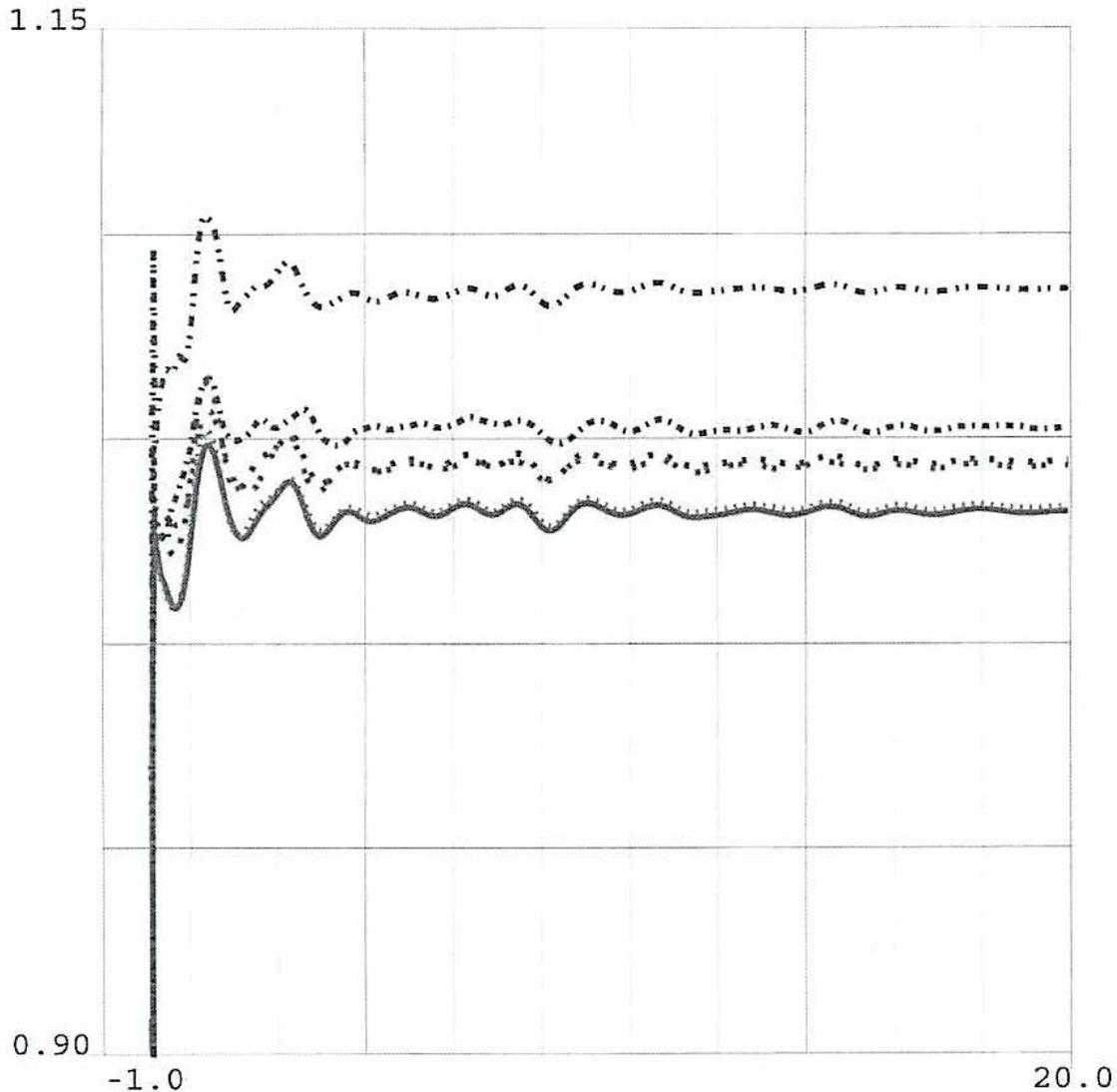


			Time(sec)				
—	0.9	vbus	24235	RECTOR	230.0	1	1 1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1 1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1 1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1 1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1 1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 500

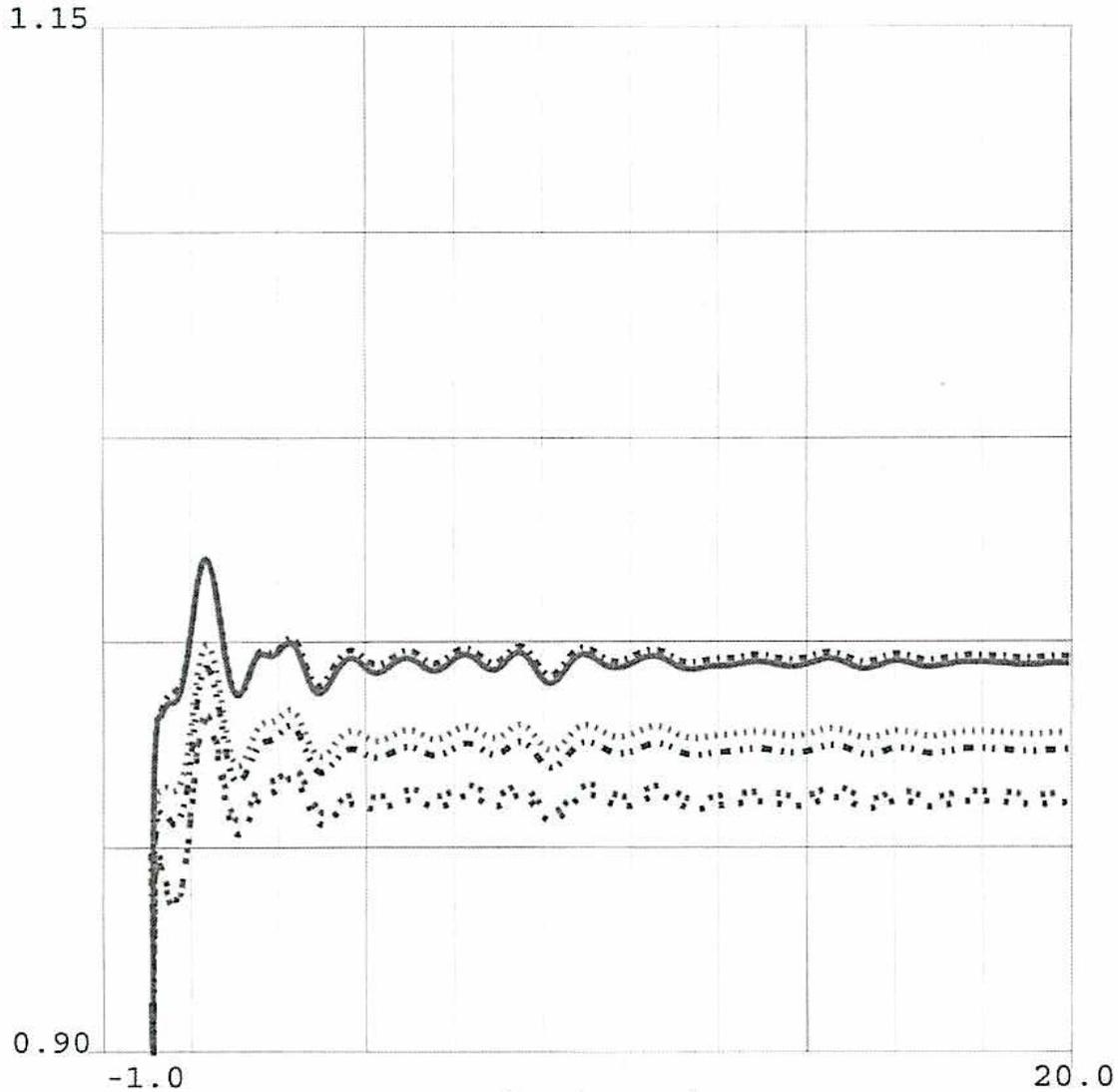


			Time (sec)					
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

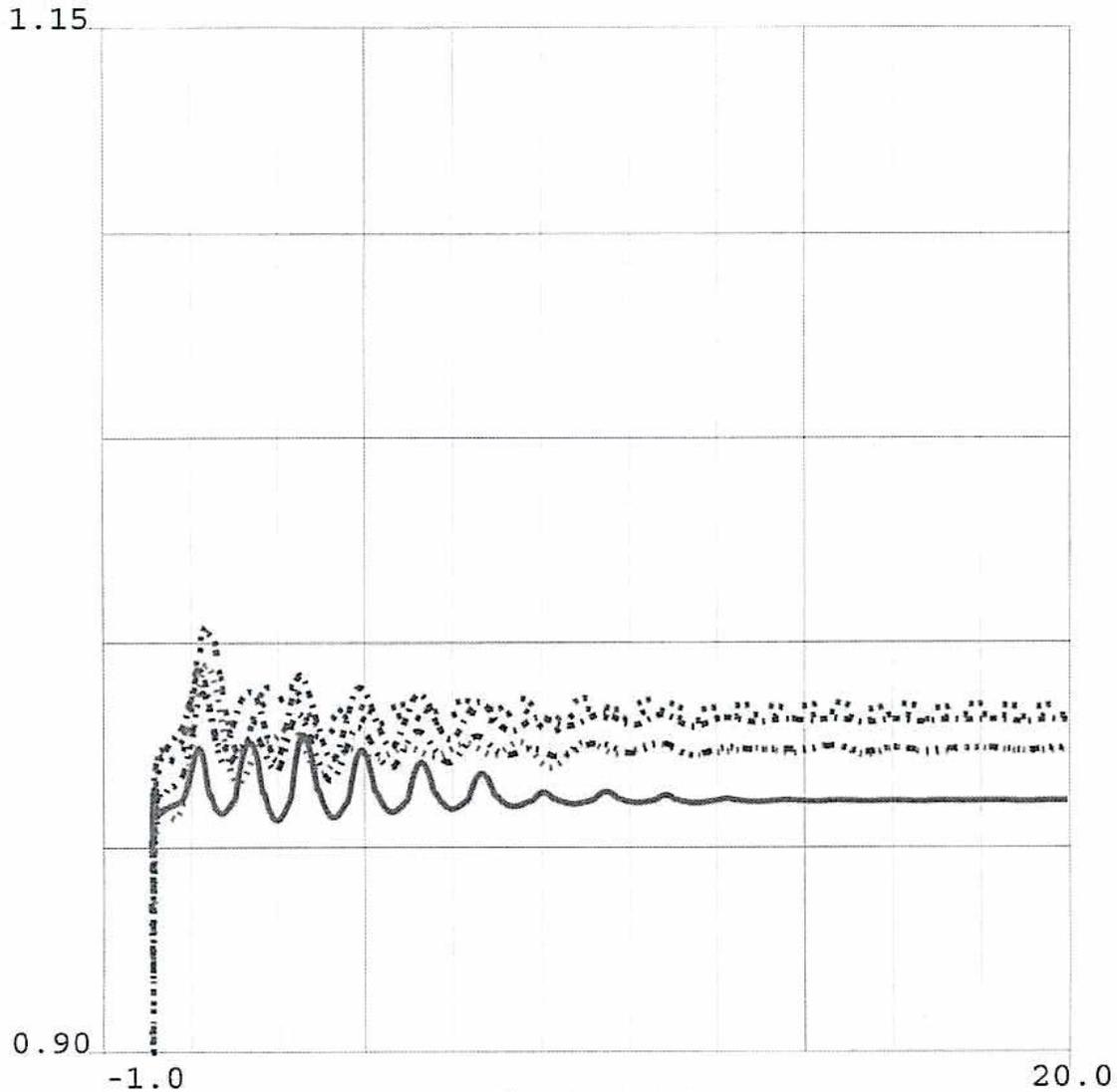


Line Style	Voltage	Bus ID	Bus Name	V1	V2	V3
—	0.9	vbus 24006	ALMITOSE	230.0	1	1.15
....	0.9	vbus 24016	BARRE	230.0	1	1.15
--	0.9	vbus 24025	CHINO	230.0	1	1.15
..	0.9	vbus 24056	ETIWANDA	230.0	1	1.15
---	0.9	vbus 24074	LA FRESA	230.0	1	1.15
...	0.9	vbus 24137	SERRANO	230.0	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

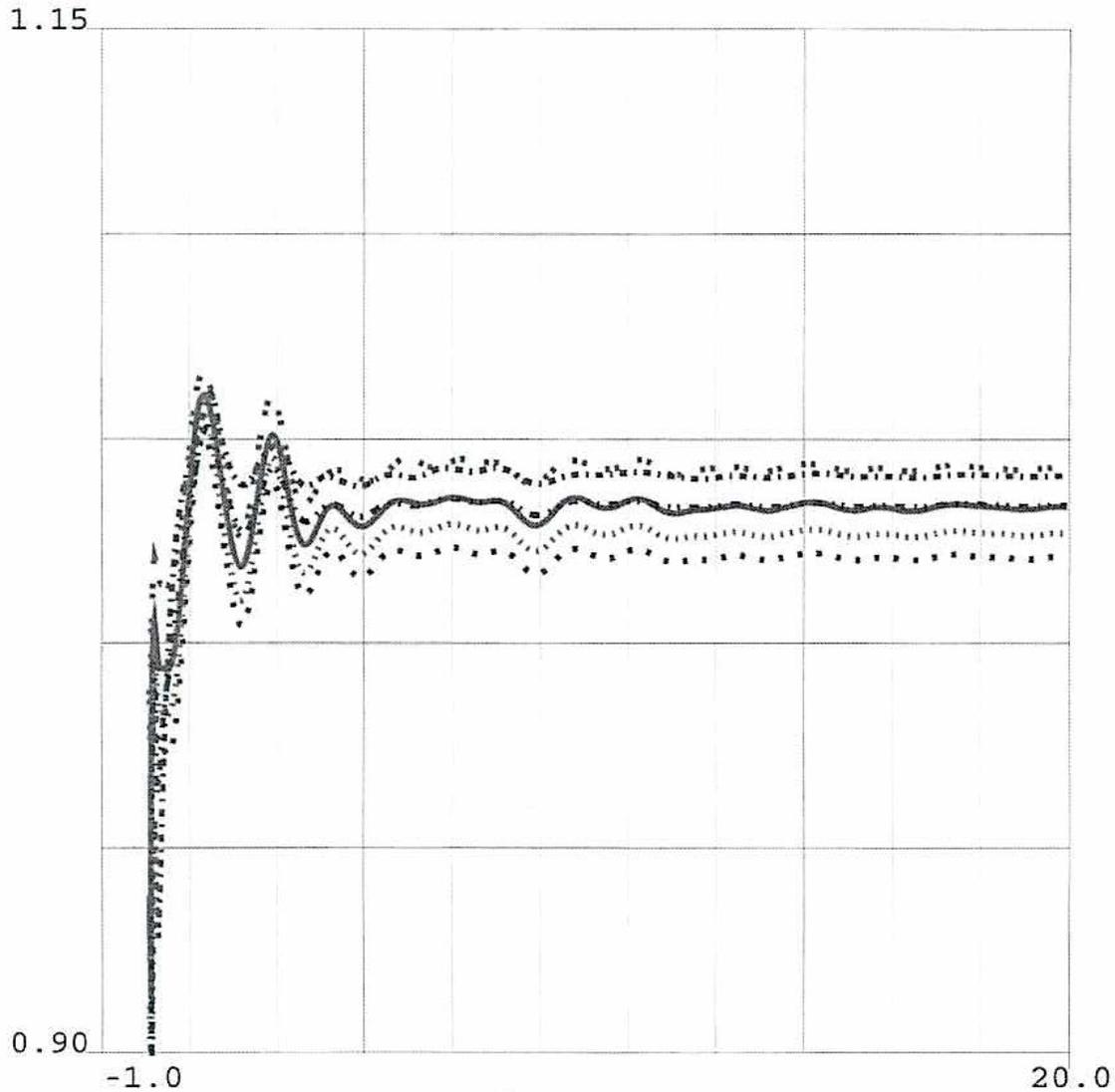


			Time(sec)				
—	0.9	vbus	24235	RECTOR	230.0	1	1 1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1 1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1 1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1 1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1 1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 500

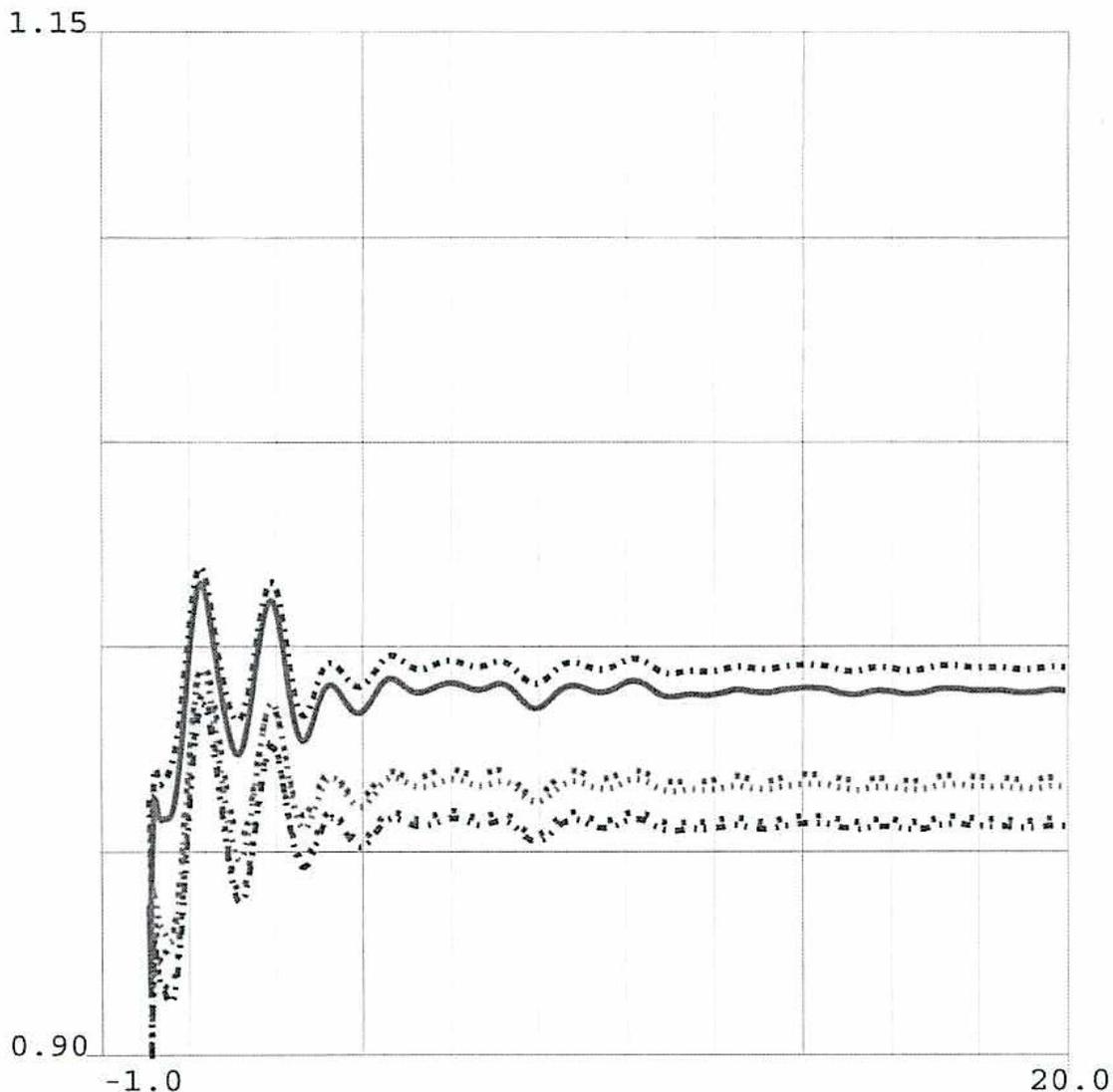


	Time (sec)							
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
...	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

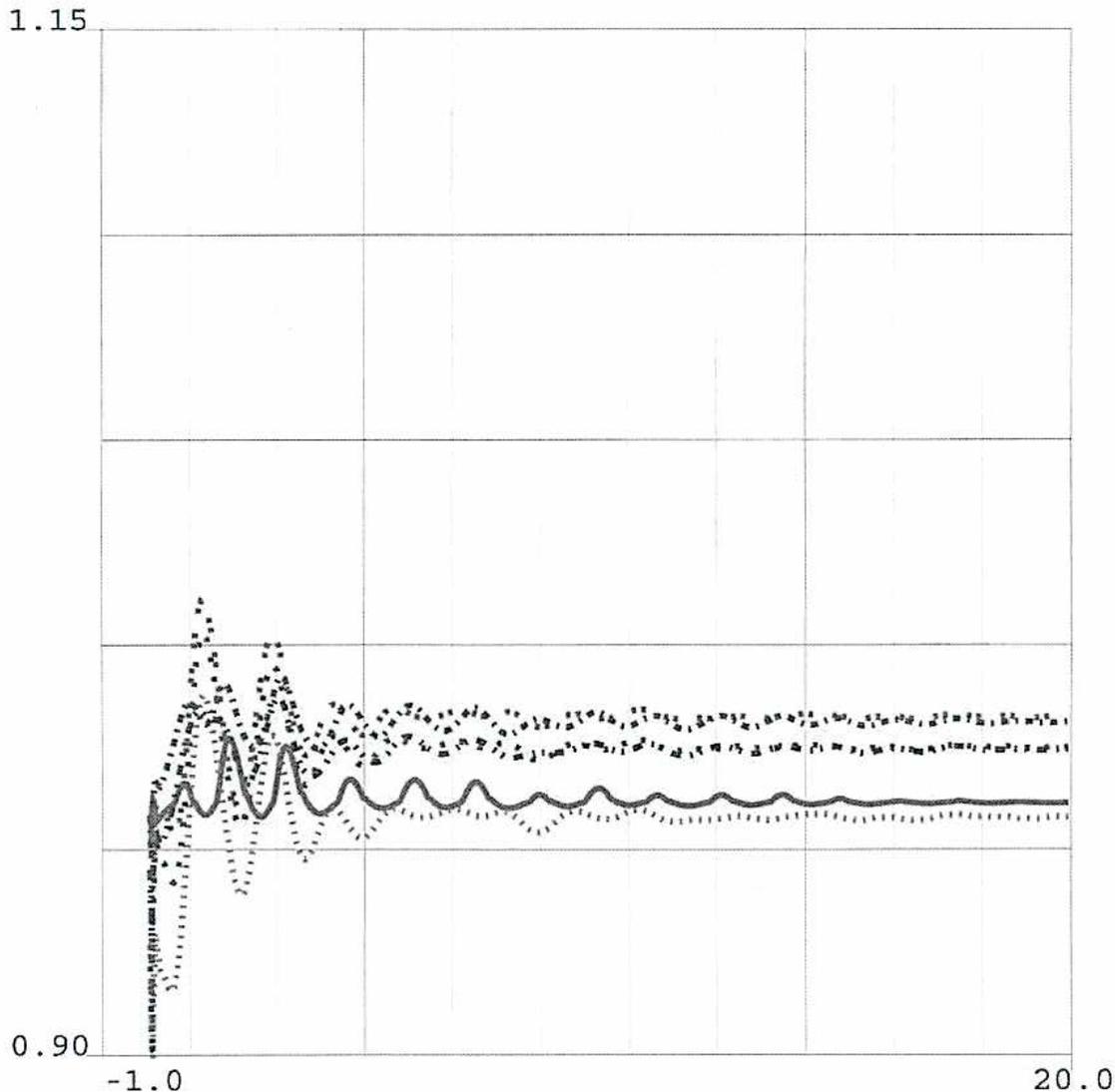


			Time(sec)				
—	0.9	vbus	24006	ALMITOSE	230.0	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1.15
..	0.9	vbus	24025	CHINO	230.0	1	1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

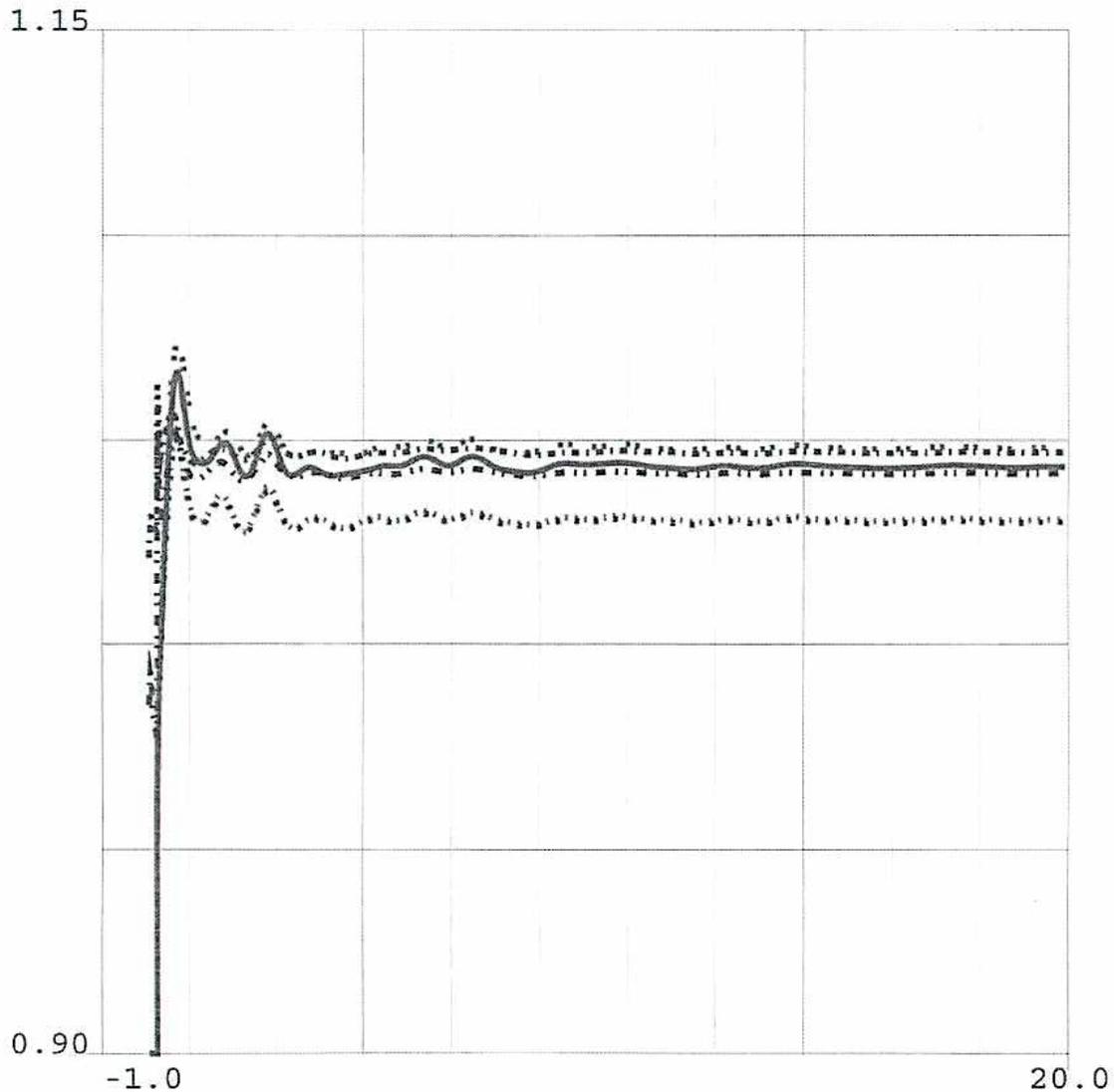


			Time(sec)					
—	0.9	vbus	24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1	1.15
..	0.9	vbus	24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 500

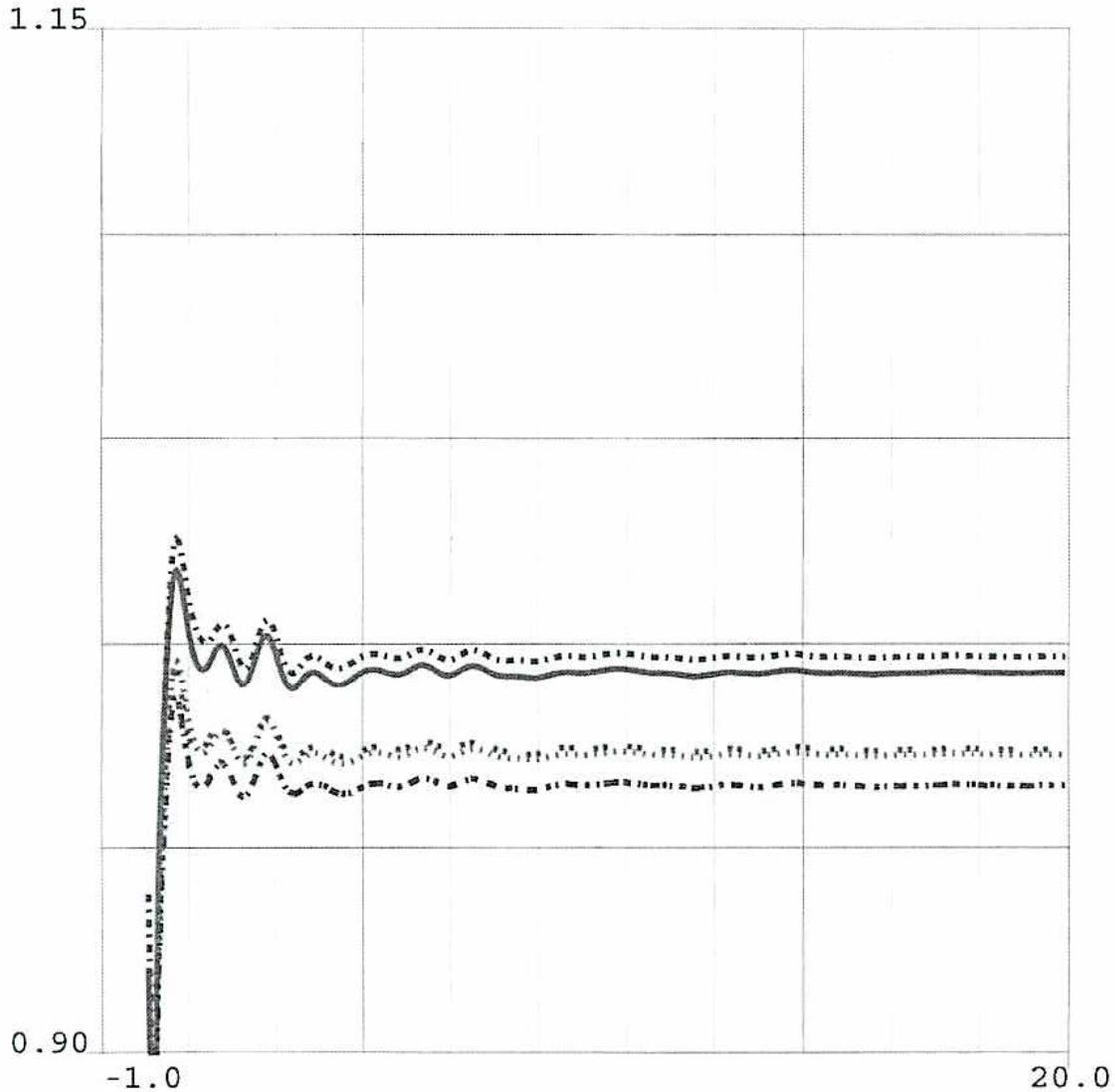


Line Style	Voltage	Bus Type	ID	Location	Capacity	Count	Steady State
—	0.9	vbus	24086	LUGO	500.0	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1.15
---	0.9	vbus	24151	VALLEYS	500.0	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

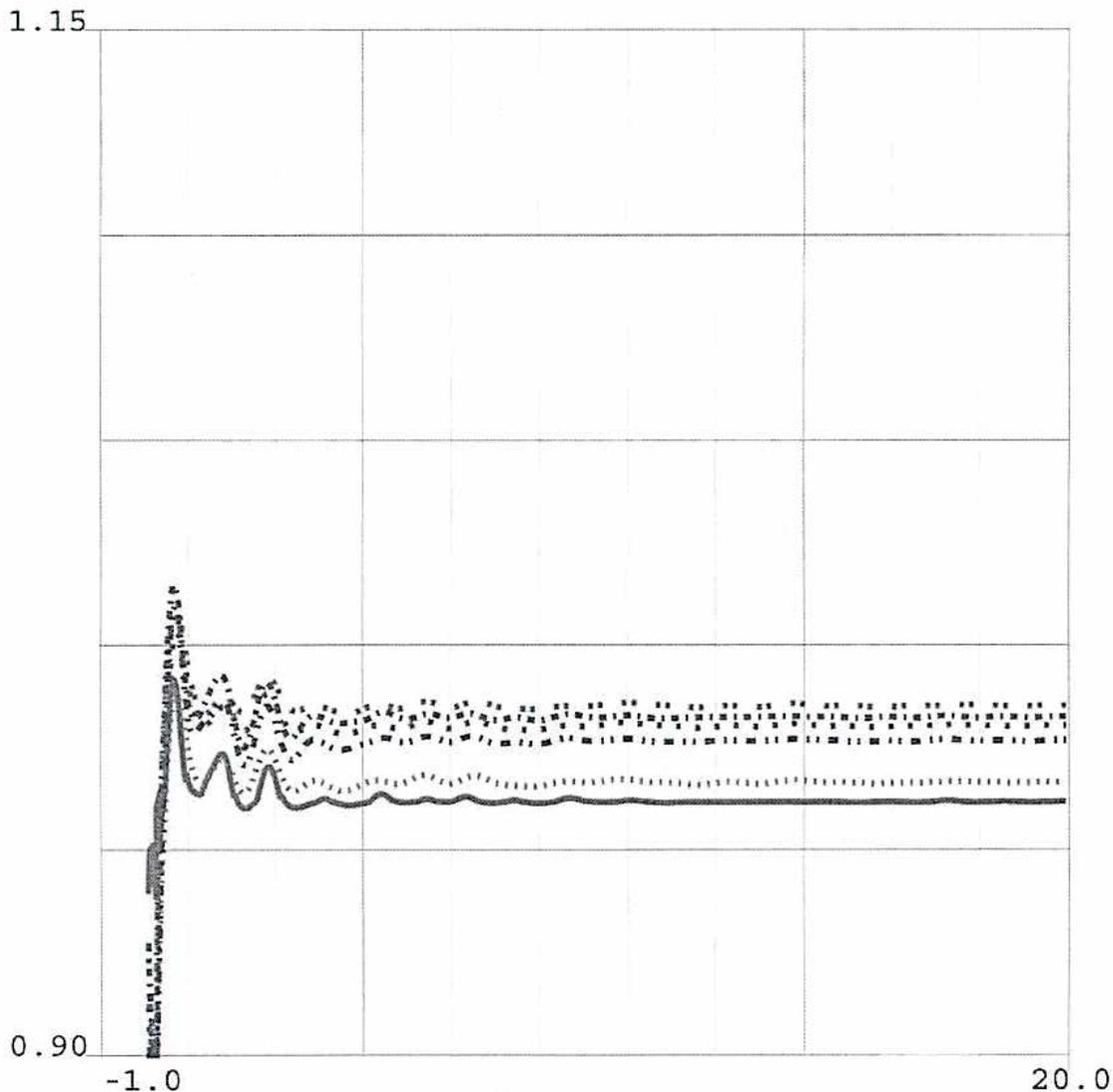


Line Style	Voltage	Bus Name	ID	Location	V1	V2	V3
—	0.9	vbus	24006	ALMITOSE	230.0	1	1 1.15
....	0.9	vbus	24016	BARRE	230.0	1	1 1.15
..	0.9	vbus	24025	CHINO	230.0	1	1 1.15
..	0.9	vbus	24056	ETIWANDA	230.0	1	1 1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1 1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

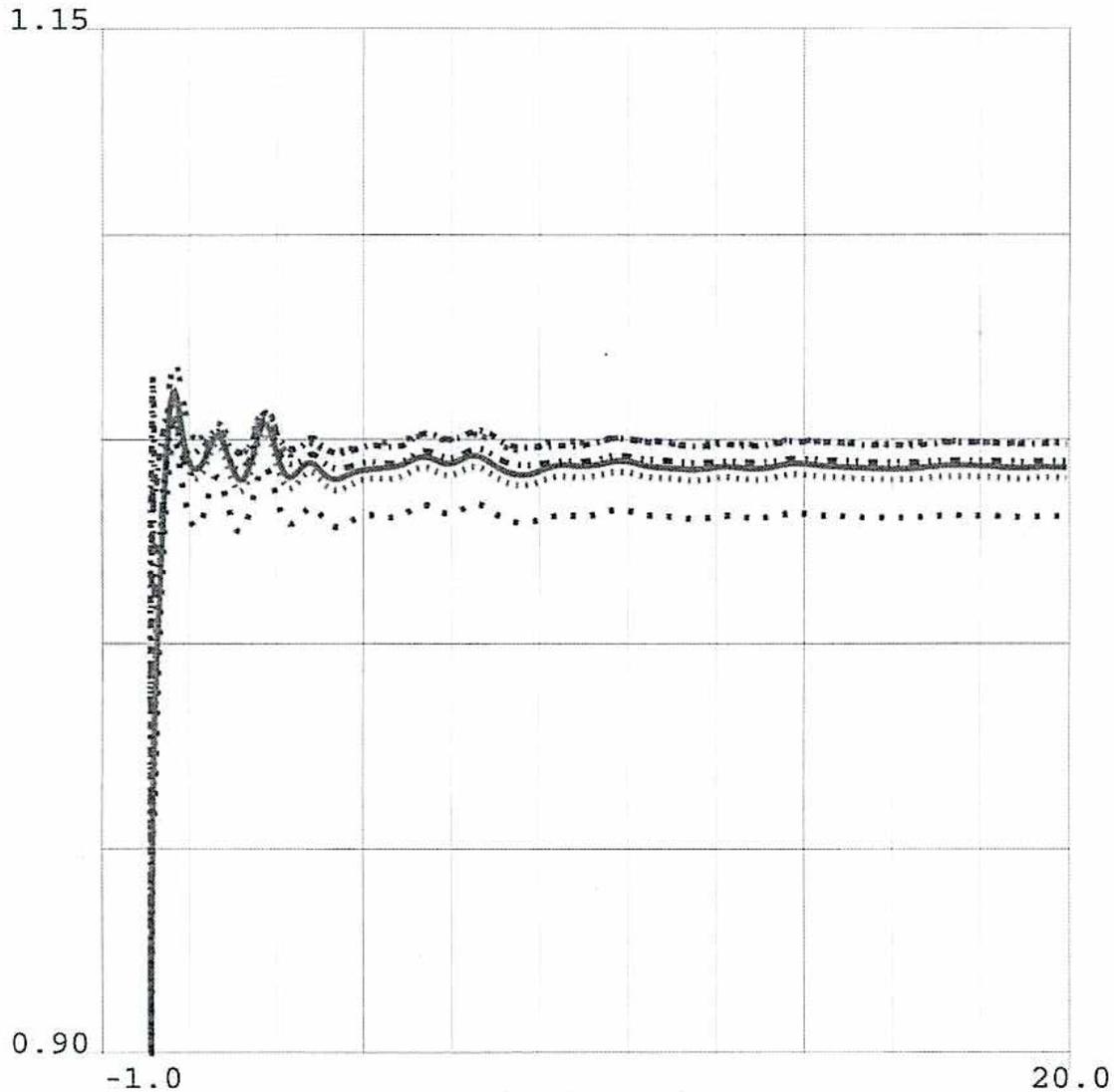


			Time (sec)				
—	0.9	vbus	24235	RECTOR	230.0	1	1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 500

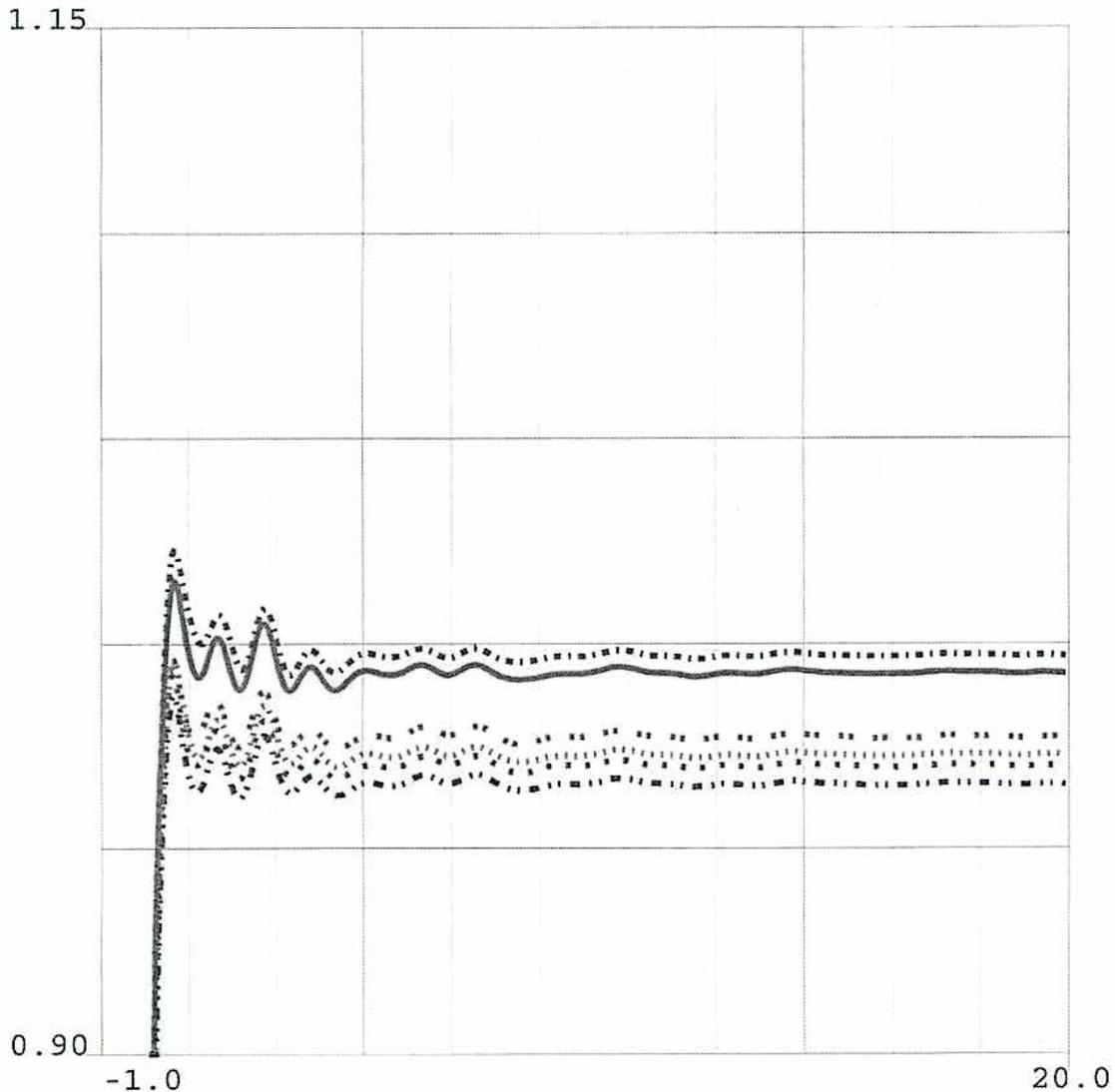


	Time(sec)							
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

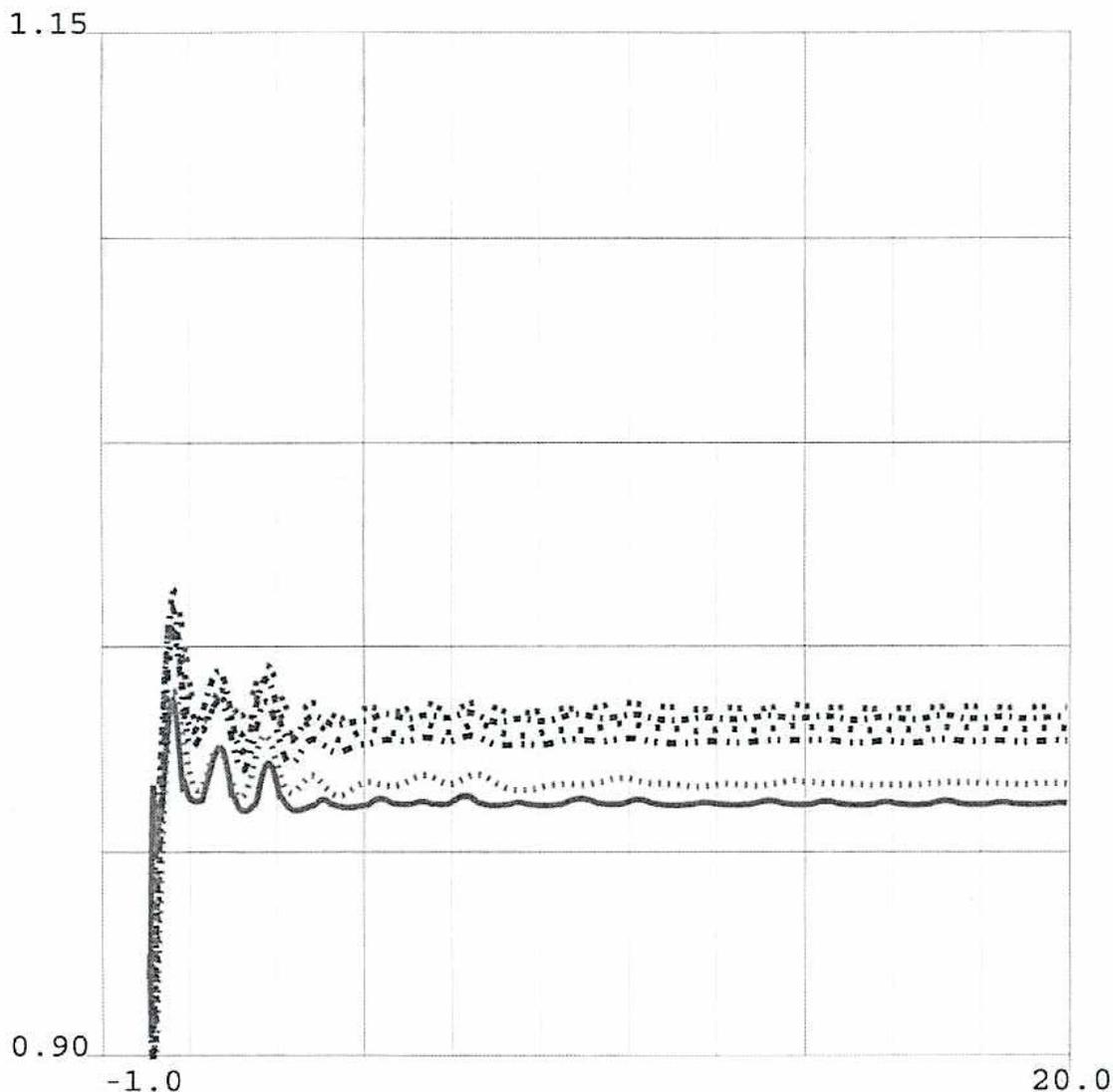


			Time (sec)				
—	0.9	vbus	24006	ALMITOSE	230.0	1	1 1.15
....	0.9	vbus	24016	BARRE	230.0	1	1 1.15
..	0.9	vbus	24025	CHINO	230.0	1	1 1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1 1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1 1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

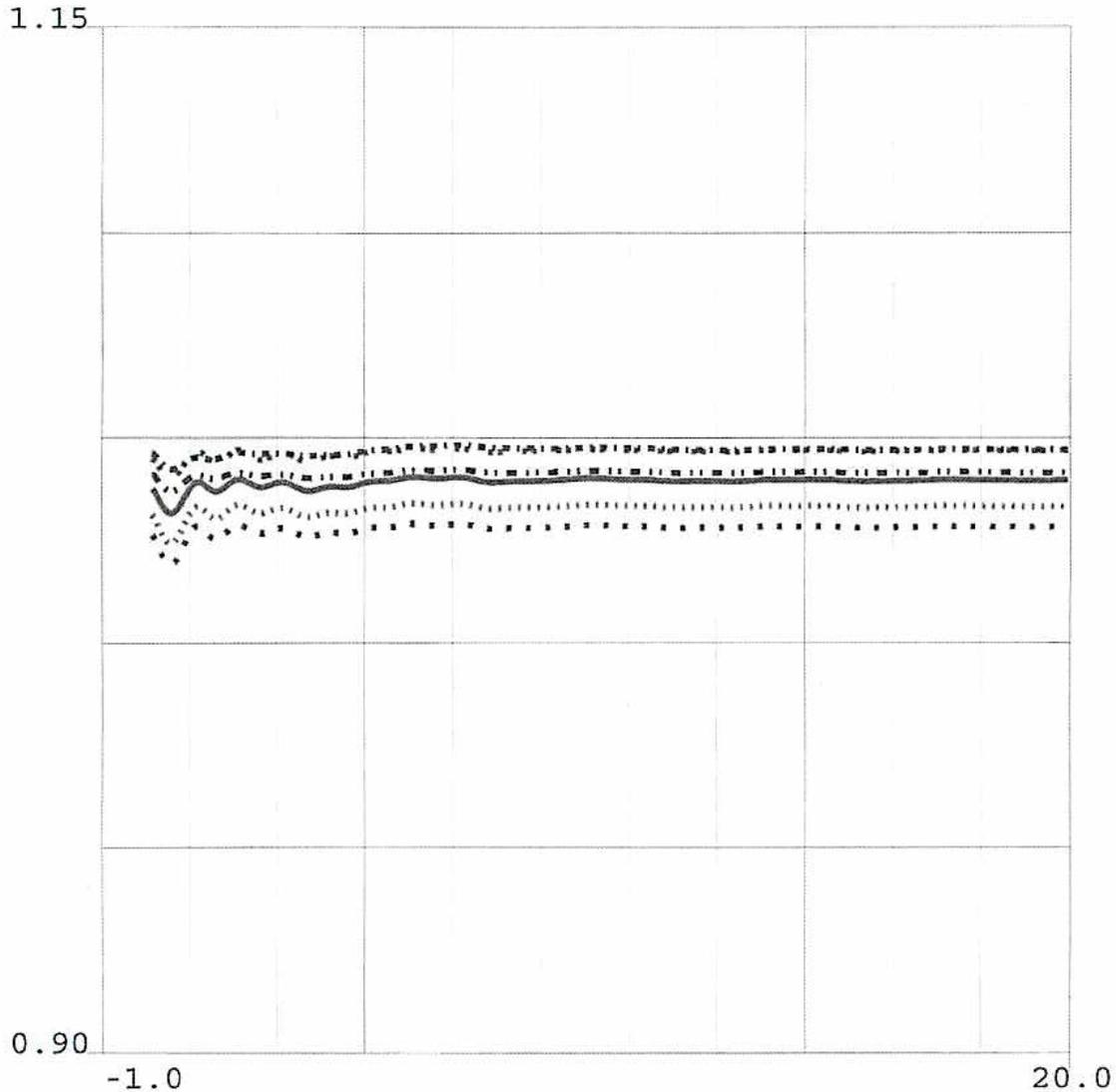


		Time(sec)						
—	0.9	vbus	24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1	1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 500

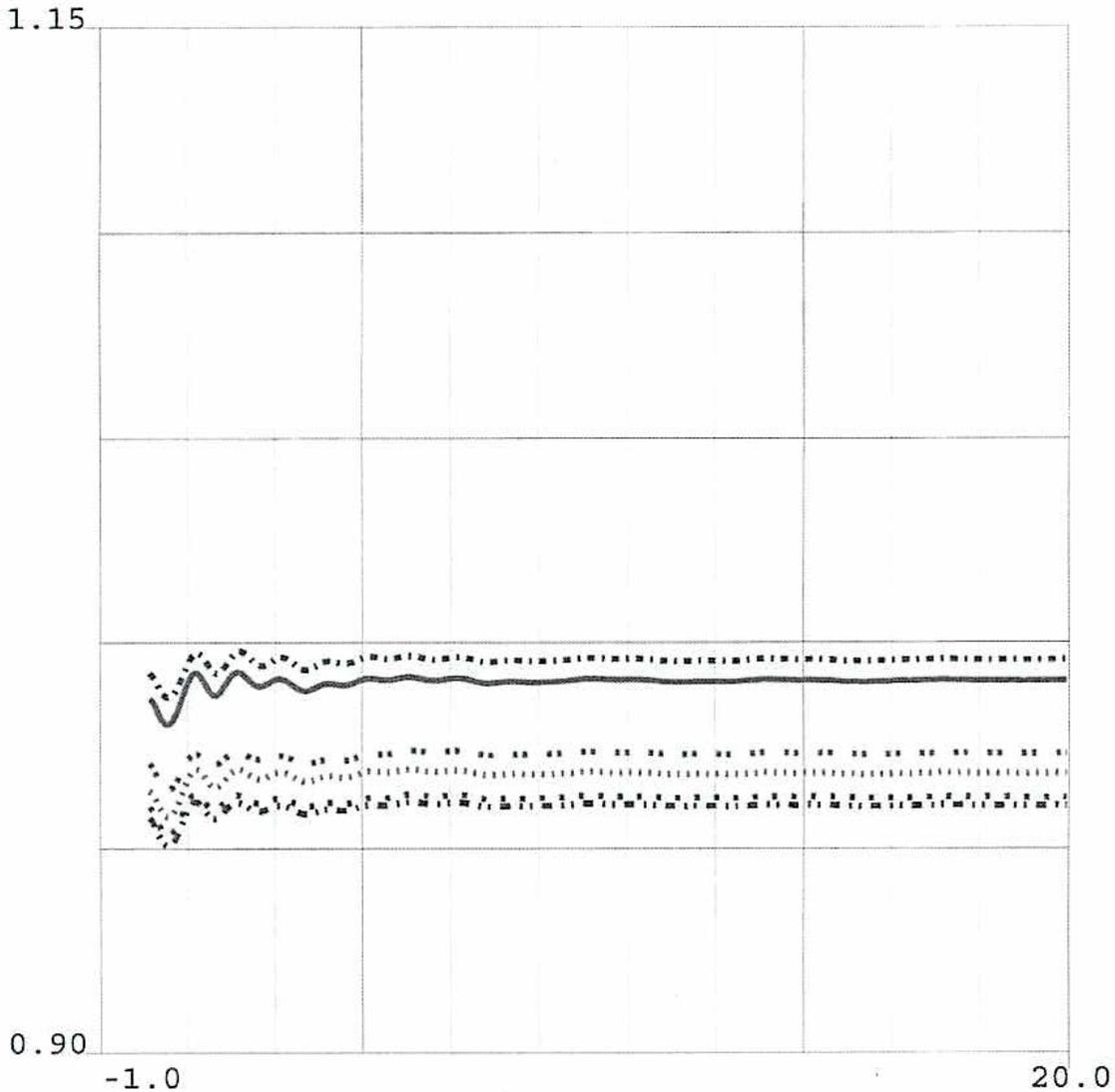


			Time (sec)				
—	0.9	vbus	24086	LUGO	500.0	1	1 1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1 1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1 1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1 1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1 1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1 1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

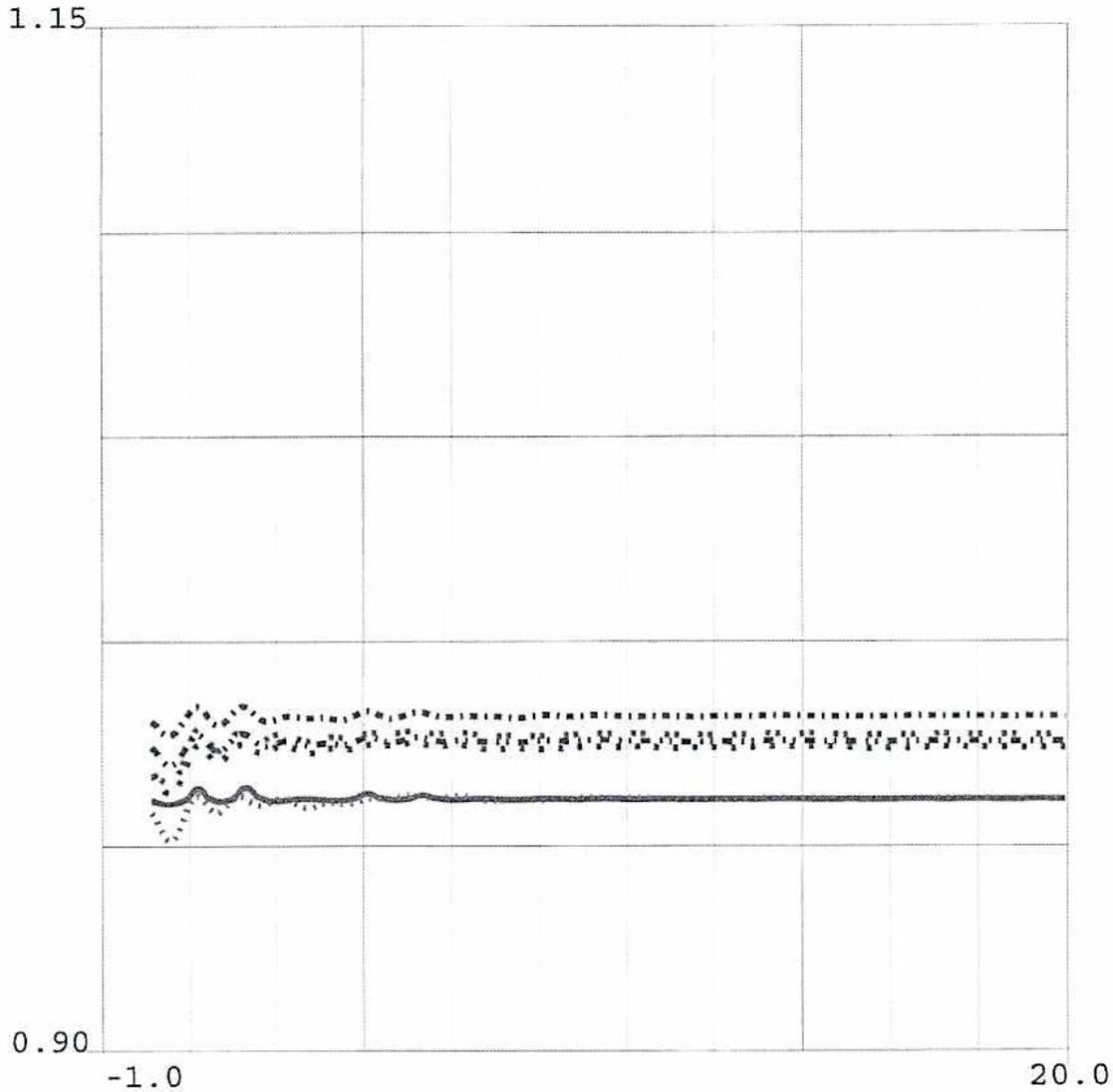


Line Style	Bus ID	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3
—	0.9 vbus 24006	ALMITOSE	230.0	1	1	1.15
....	0.9 vbus 24016	BARRE	230.0	1	1	1.15
..	0.9 vbus 24025	CHINO	230.0	1	1	1.15
..	0.9 vbus 24056	ETIWANDA	230.0	1	1	1.15
---	0.9 vbus 24074	LA FRESA	230.0	1	1	1.15
---	0.9 vbus 24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

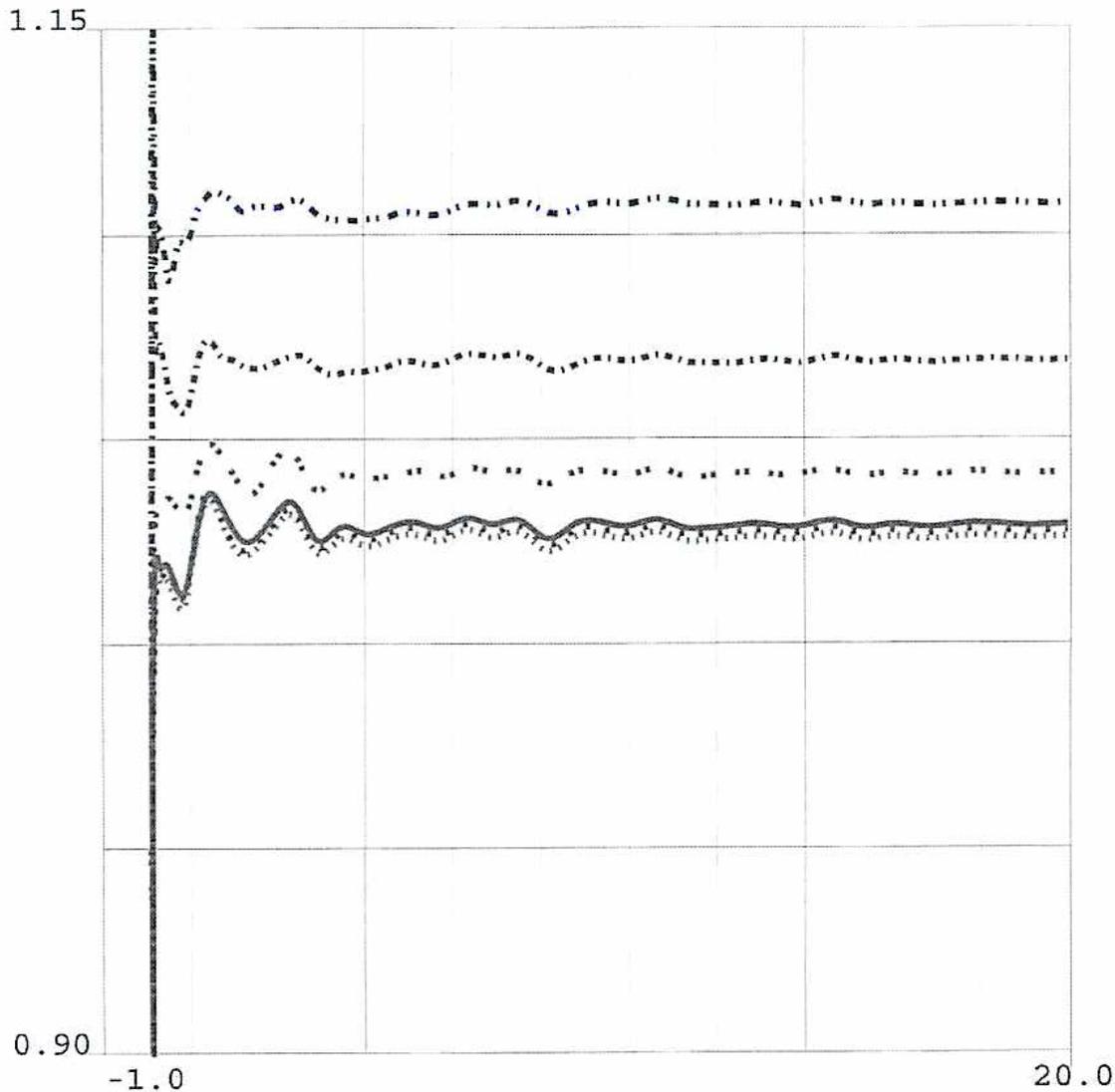


			Time (sec)					
—	0.9	vbus	24235	RECTOR	230.0	1	1	1.15
...	0.9	vbus	25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1	1.15
...	0.9	vbus	24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 500

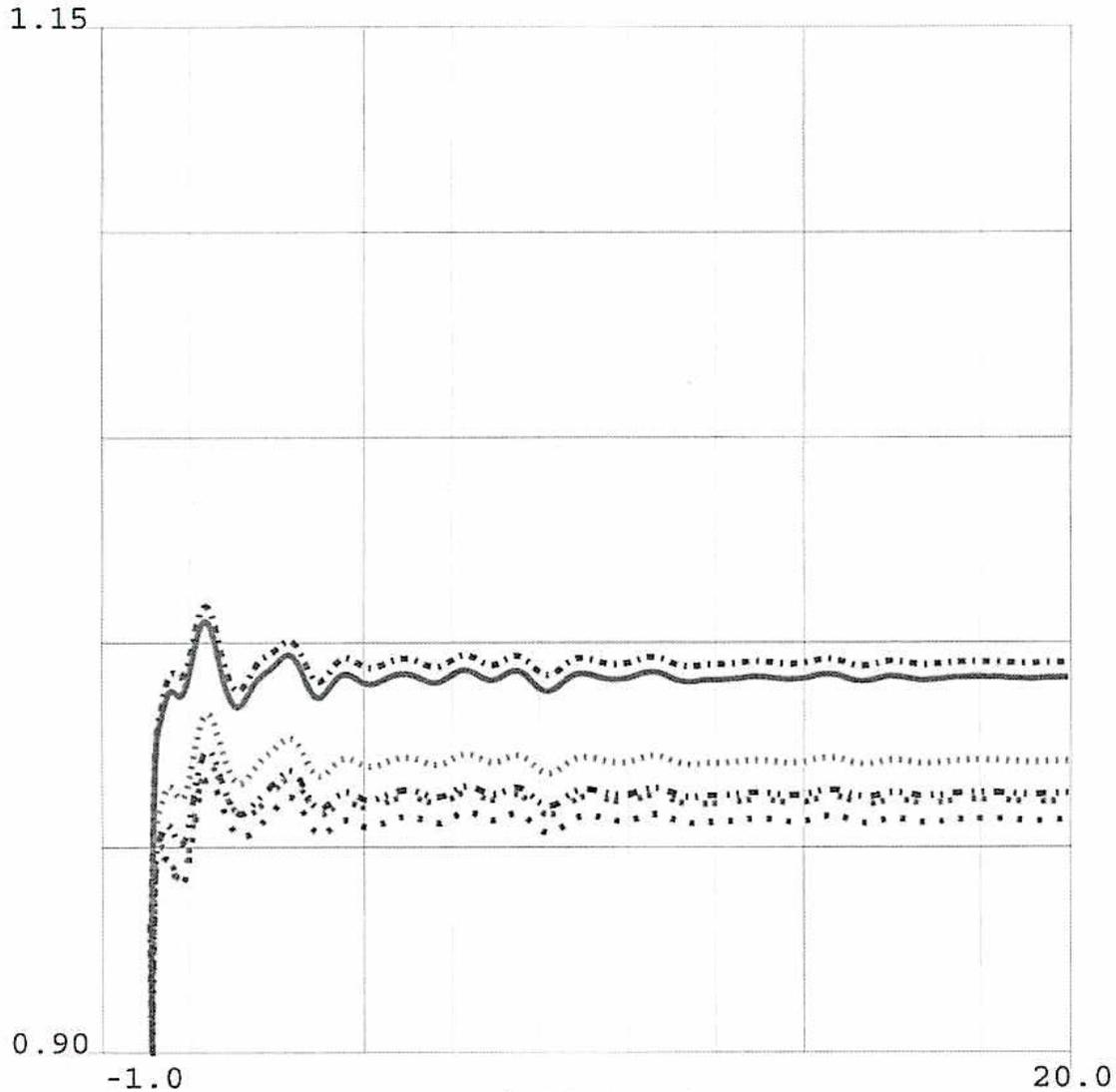


Line Style	Voltage	Bus ID	Location	Capacity (MW)	Count 1	Count 2	Reference
—	0.9	vbus 24086	LUGO	500.0	1	1	1.15
....	0.9	vbus 24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus 24138	SERRANO	500.0	1	1	1.15
..	0.9	vbus 24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus 24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus 24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

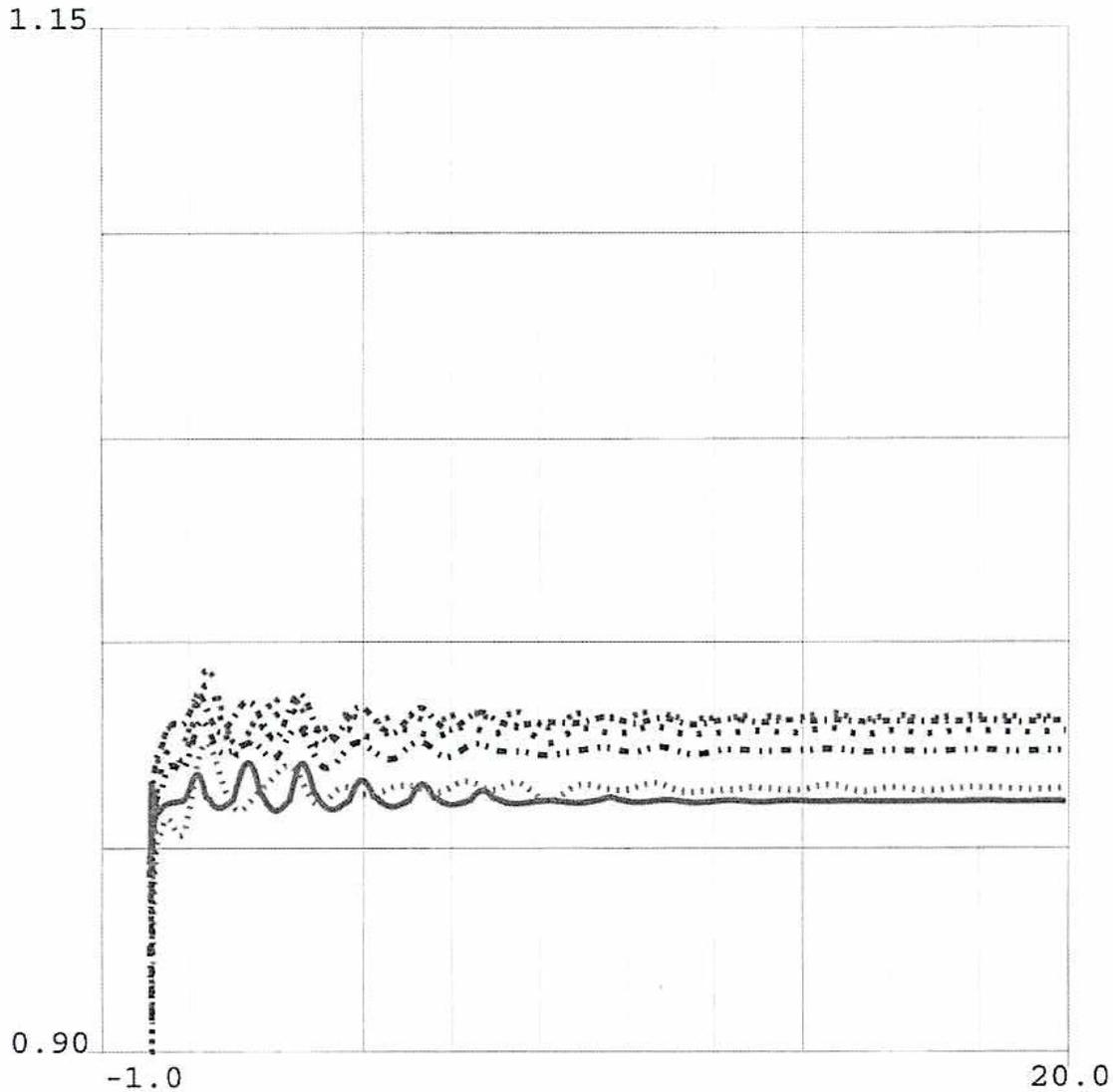


		Time(sec)						
—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
..	0.9	vbus	24025	CHINO	230.0	1	1	1.15
..	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



BUS_VOLT_MAG FOR SCE 230 Part 2



			Time(sec)				
—	0.9	vbus	24235	RECTOR	230.0	1	1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1.15
.. .	0.9	vbus	24134	SANTIAGO	230.0	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1.15

EME Sun Valley Project, 2007 Heavy Summer Case (Post Project)
 SCE [LOAD 22964 XCHGE -6584 GEN 17527] [AA 2107V 1098M 1058D 990VA]MW
 [S.LUGO 243MW] [N.LUGO 165MW] [N.SONGS 1053MW] [S.SONGS 1087MW] [WOD 4656MW]
 [SYLMAR 541] [VIC-LUGO 260] [EL-LUGO 803] [MHV-LUGO 796] [DV IMPORT 3570]MW



APPENDIX F STABILITY PLOTS FOR OFF-PEAK LOAD CONDITIONS

2008 Off-Peak Load (Pre Project)

Pre-Project Devers-SBOakV DLO

Pre-Project Devers-Valley SLO

Pre-Project Hassavampa – Ngila SLO

Pre-Project Lugo South DLO

Pre-Project Serrano North DLO

Pre-Project SONGS G-1

Pre-Project Valley - Serrano SLO

2008 Off-Peak Load (Post Project)

Post-Project Devers-SBOakV DLO

Post-Project Devers-Valley SLO

Post-Project Hassayampa – Ngila SLO

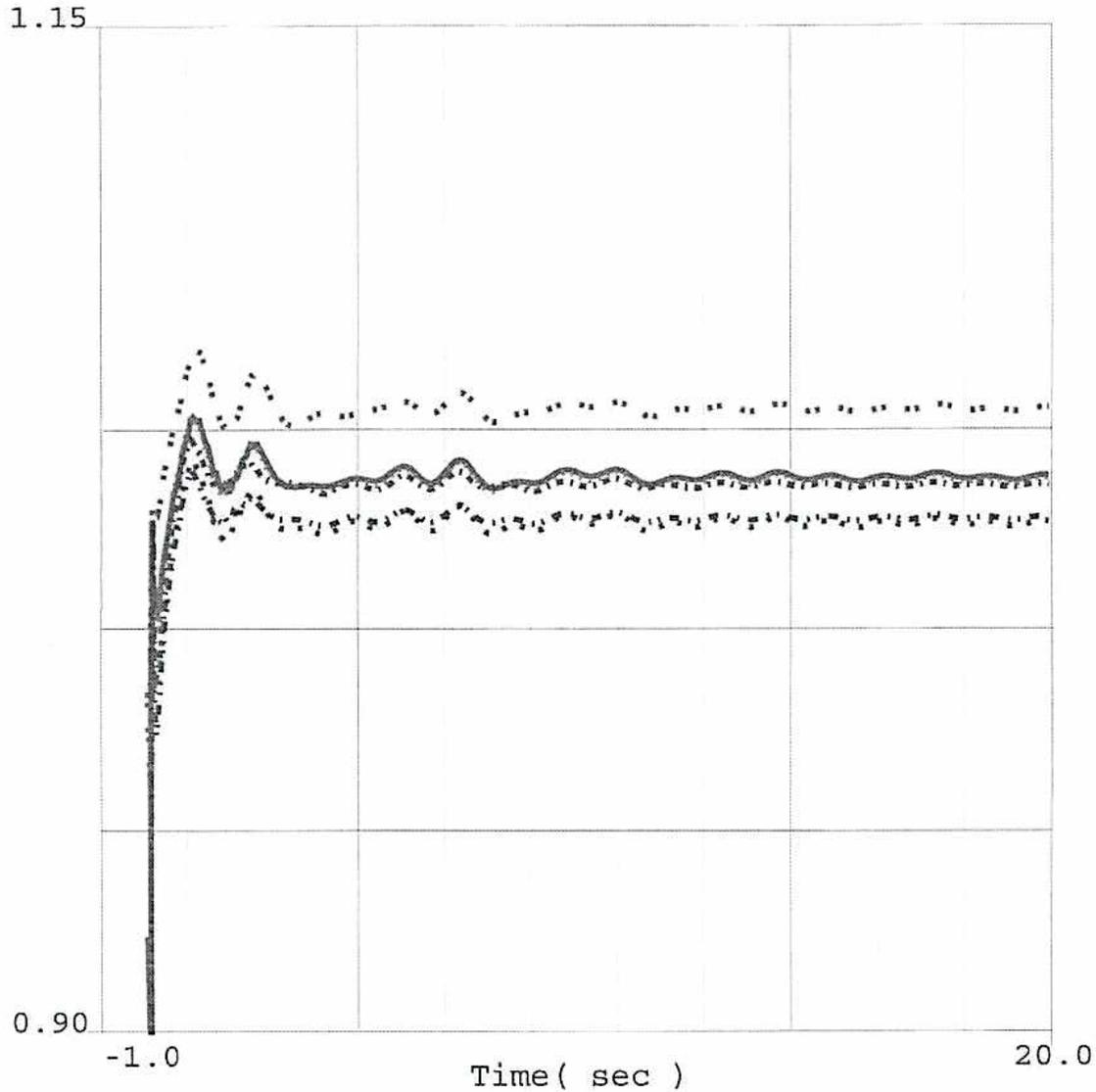
Post-Project Lugo South DLO

Post-Project Serrano North DLO

Post-Project SONGS G-1

Post-Project Valley - Serrano SLO

BUS_VOLT_MAG FOR SCE 500

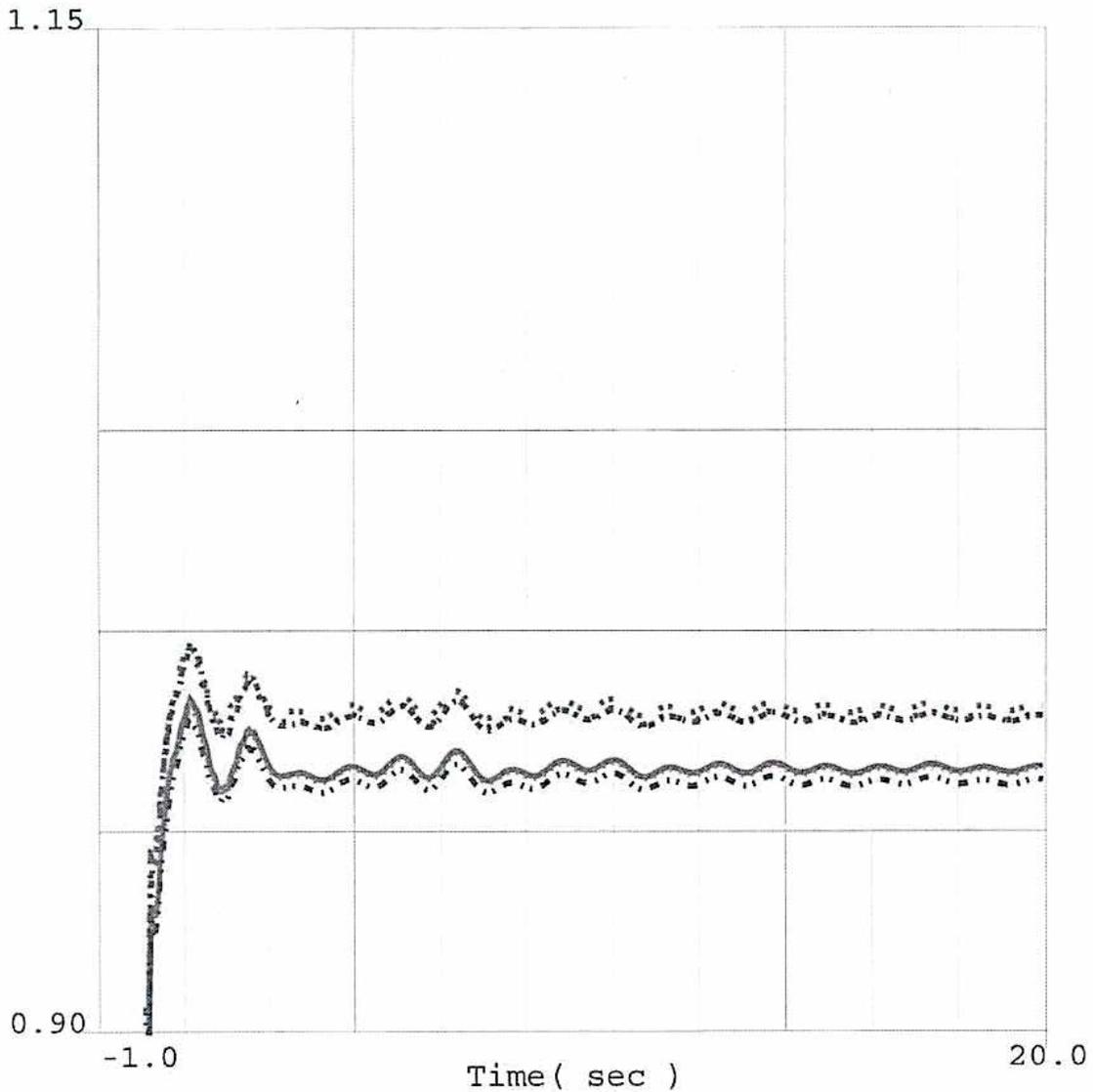


Line Style	Bus ID	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3
—	0.9	vbus 24086 LUGO	500.0	1	1	1.15
....	0.9	vbus 24092 MIRALOMA	500.0	1	1	1.15
..	0.9	vbus 24138 SERRANO	500.0	1	1	1.15
.. .	0.9	vbus 24156 VINCENT	500.0	1	1	1.15
---	0.9	vbus 24801 DEVERS	500.0	1	1	1.15
---	0.9	vbus 24151 VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



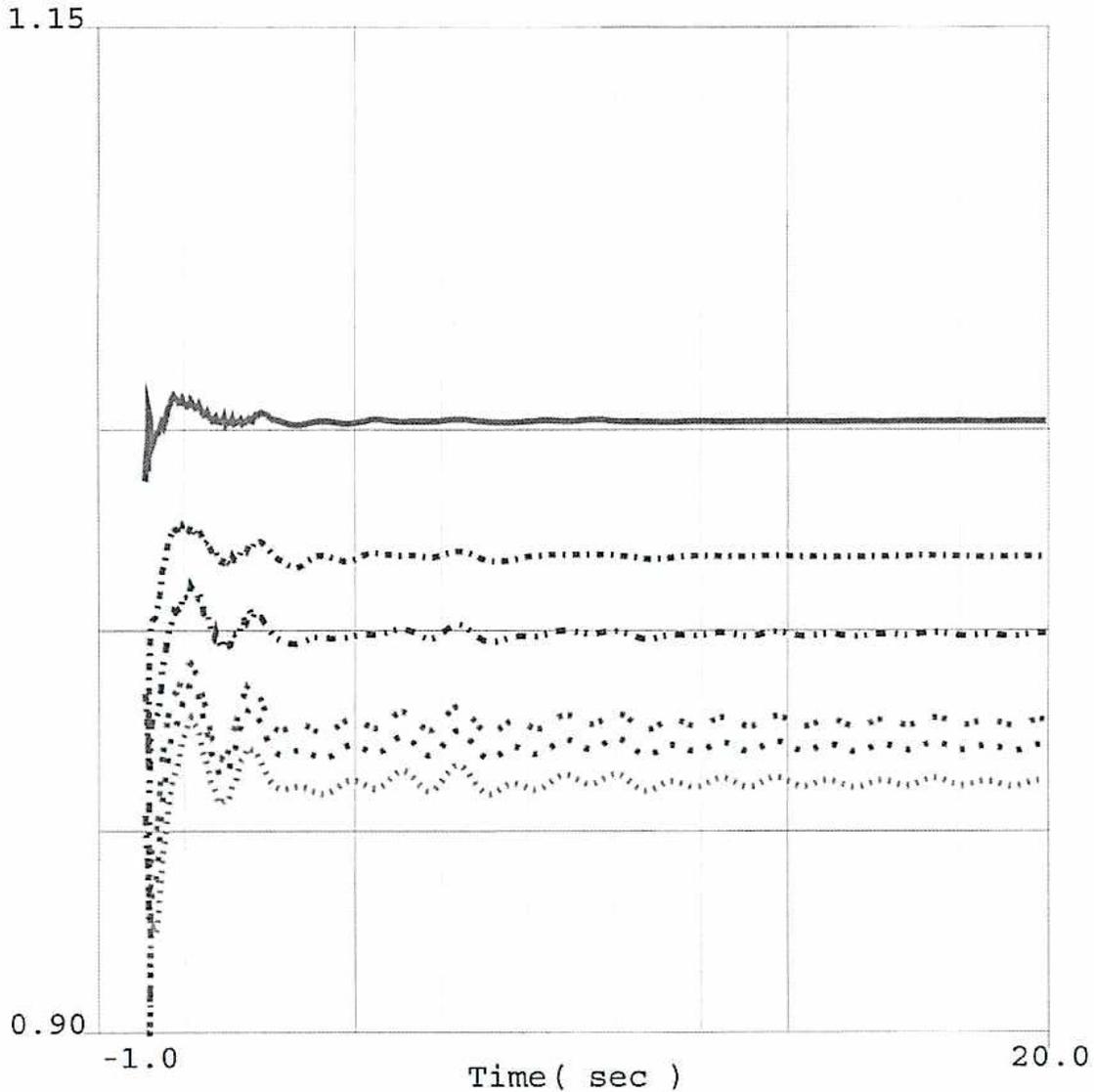
BUS_VOLT_MAG FOR SCE 230 Part 1



Line Style	Bus ID	Bus Name	Voltage (V)	Phase 1	Phase 2	Phase 3
—	0.9 vbus 24006	ALMITOSE	230.0	1	1	1.15
....	0.9 vbus 24016	BARRE	230.0	1	1	1.15
..	0.9 vbus 24025	CHINO	230.0	1	1	1.15
...	0.9 vbus 24056	ETIWANDA	230.0	1	1	1.15
---	0.9 vbus 24074	LA FRESA	230.0	1	1	1.15
---	0.9 vbus 24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



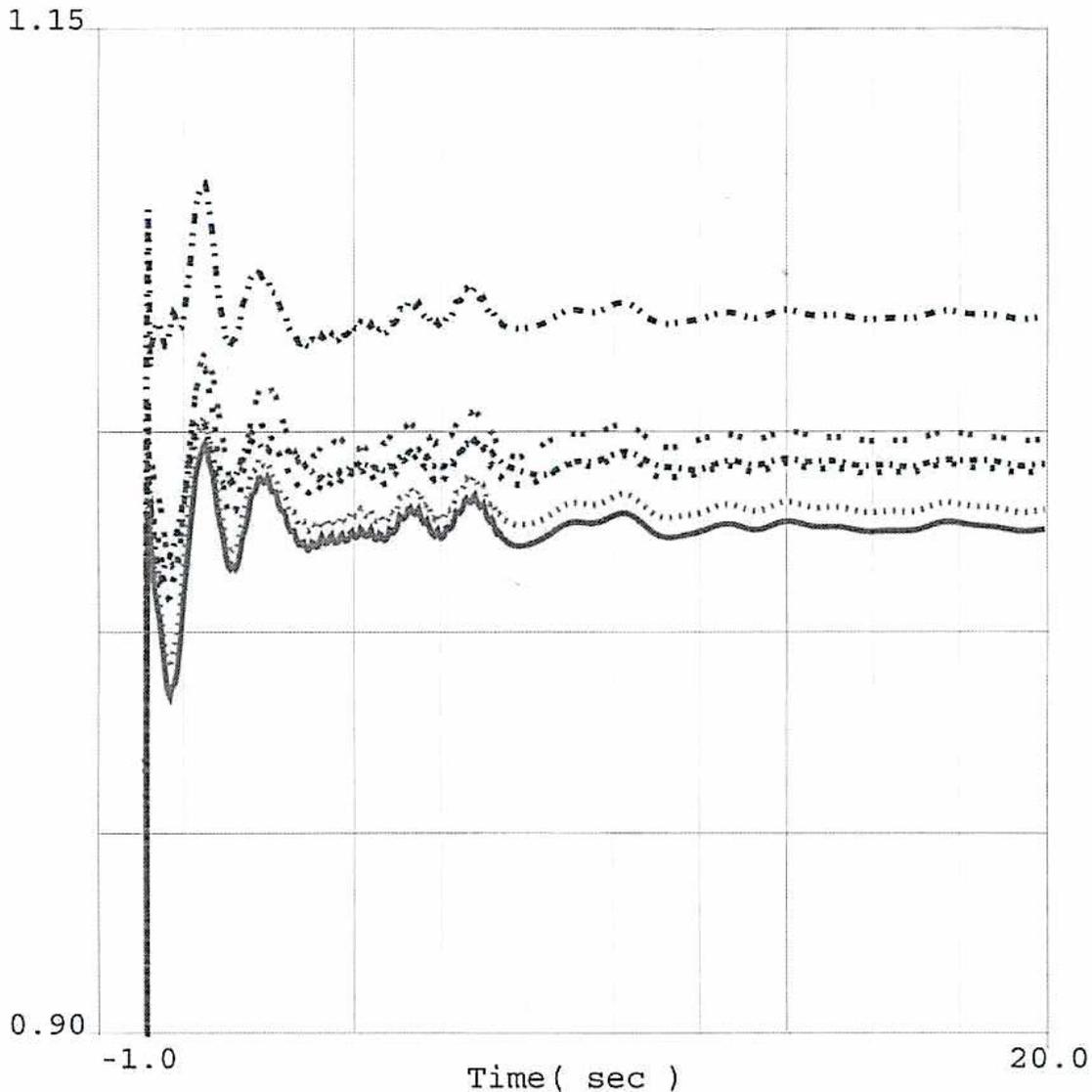


Line Style	Bus ID	Bus Name	Mag	Phase	Phase	Mag	
—	0.9	vbus 24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus 25201	LEWIS	230.0	1	1	1.15
- - -	0.9	vbus 24044	ELLIS	230.0	1	1	1.15
- . - .	0.9	vbus 24134	SANTIAGO	230.0	1	1	1.15
- - -	0.9	vbus 24087	MAGUNDEN	230.0	1	1	1.15
- - -	0.9	vbus 24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 500

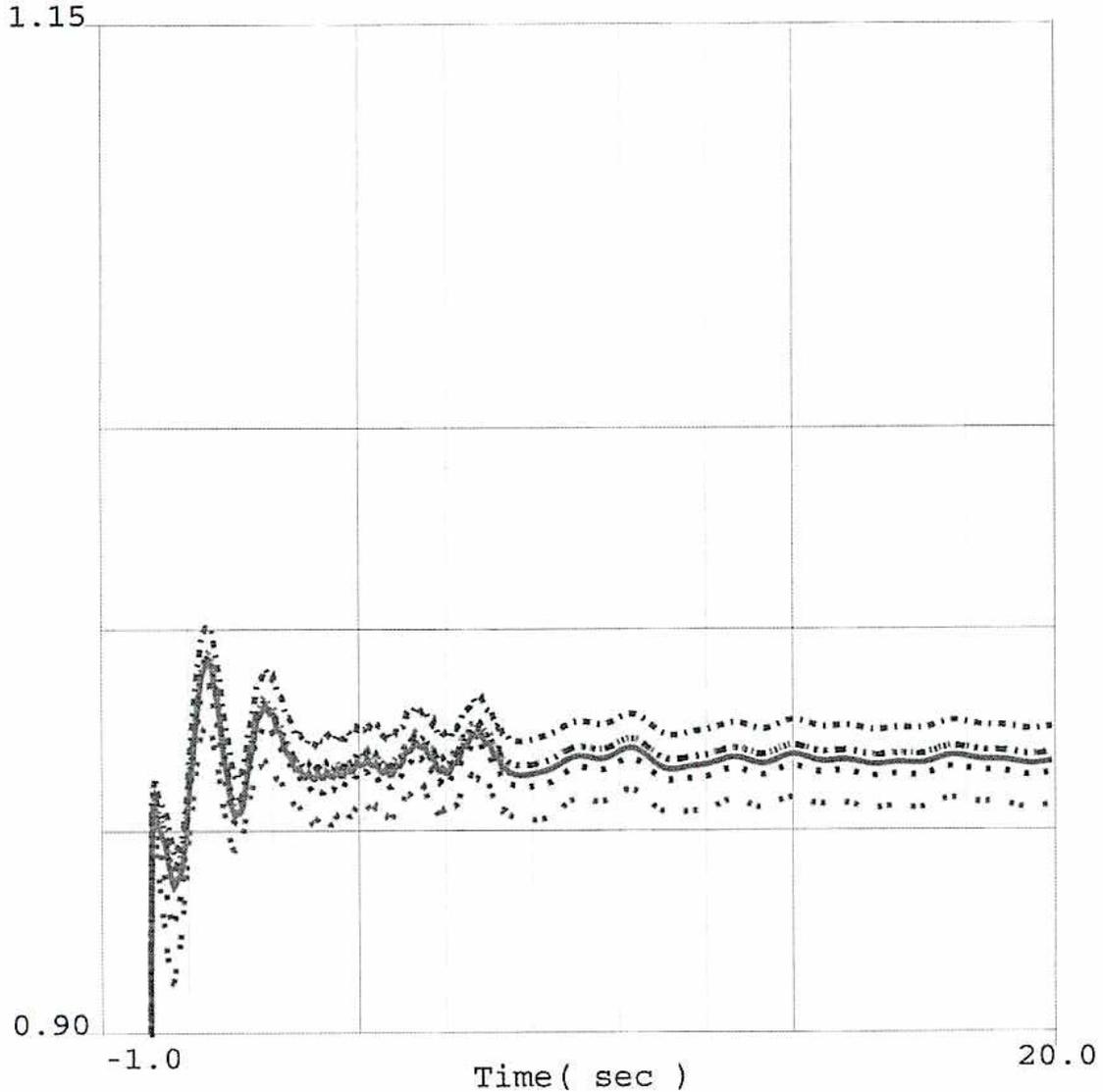


Line Style	Bus ID	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3
—	0.9 vbus 24086	LUGO	500.0	1	1	1.15
....	0.9 vbus 24092	MIRALOMA	500.0	1	1	1.15
..	0.9 vbus 24138	SERRANO	500.0	1	1	1.15
...	0.9 vbus 24156	VINCENT	500.0	1	1	1.15
---	0.9 vbus 24801	DEVERS	500.0	1	1	1.15
---	0.9 vbus 24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

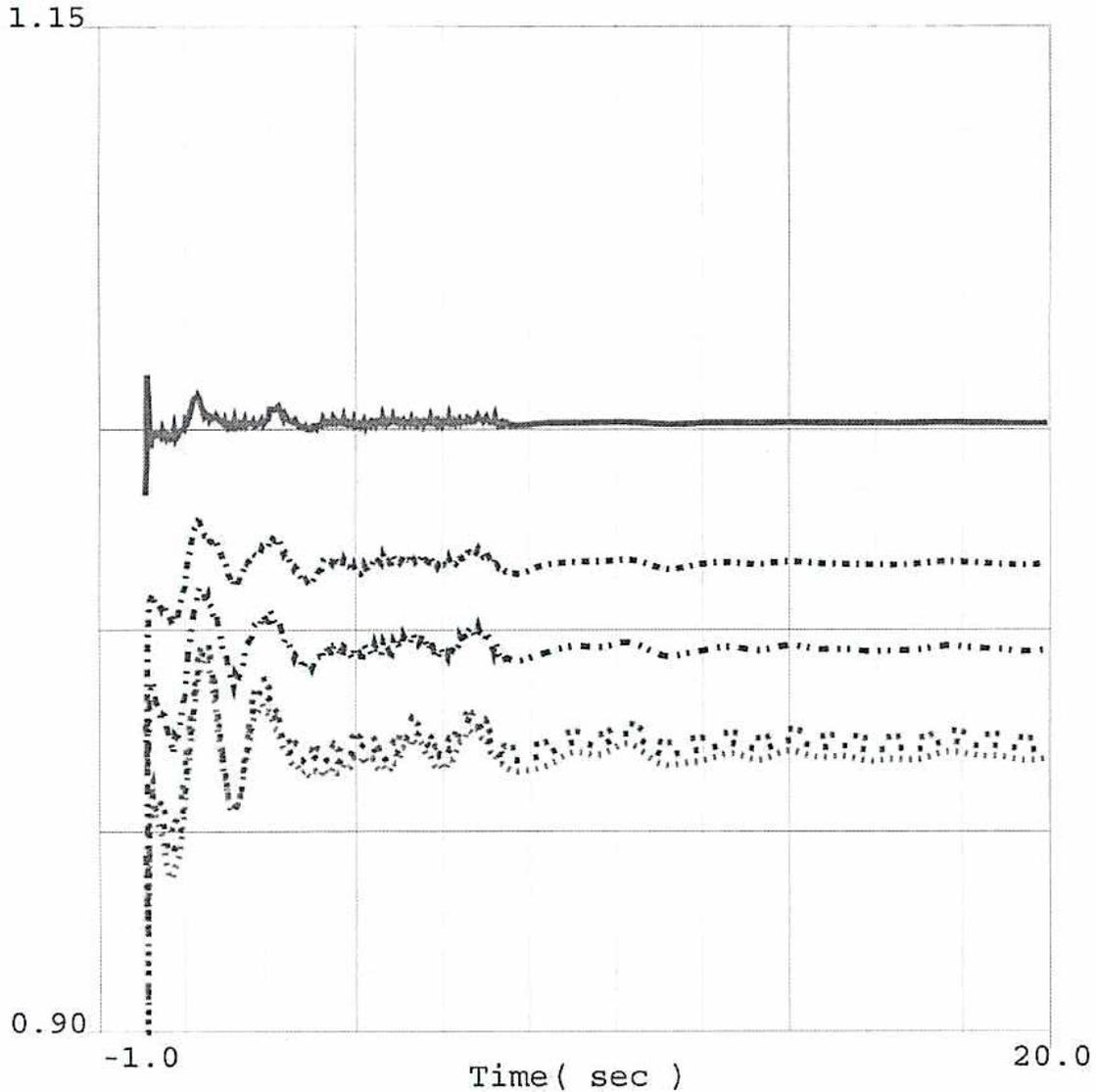


Line Style	Bus ID	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3
—	0.9 vbus	24006 ALMITOSE	230.0	1	1	1.15
....	0.9 vbus	24016 BARRE	230.0	1	1	1.15
..	0.9 vbus	24025 CHINO	230.0	1	1	1.15
...	0.9 vbus	24056 ETIWANDA	230.0	1	1	1.15
---	0.9 vbus	24074 LA FRESA	230.0	1	1	1.15
---	0.9 vbus	24137 SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

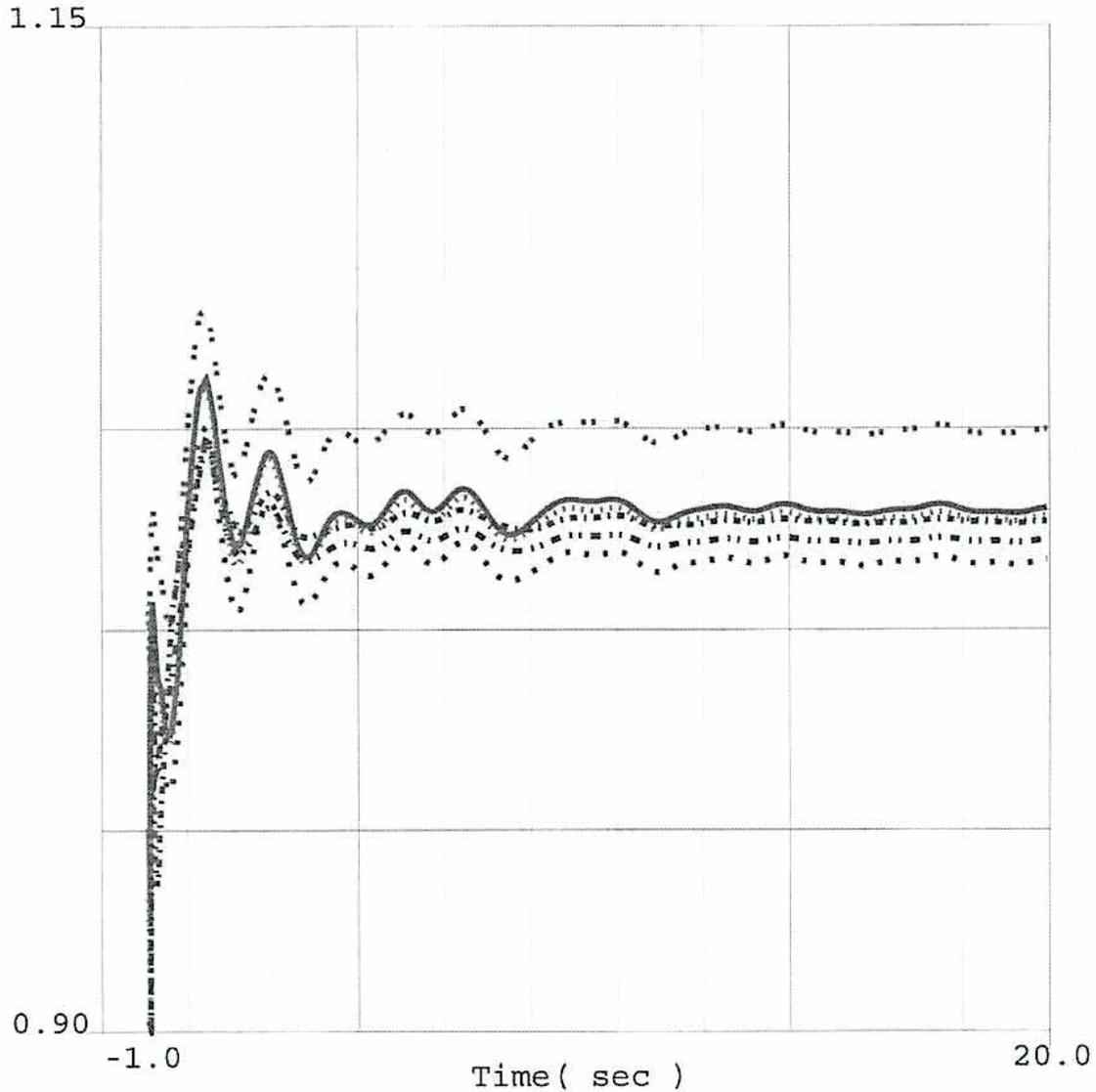


Line Style	Bus ID	Bus Name	230V	1	1	1.15	
—	0.9	vbus 24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus 25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus 24044	ELLIS	230.0	1	1	1.15
.. .	0.9	vbus 24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus 24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus 24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 500

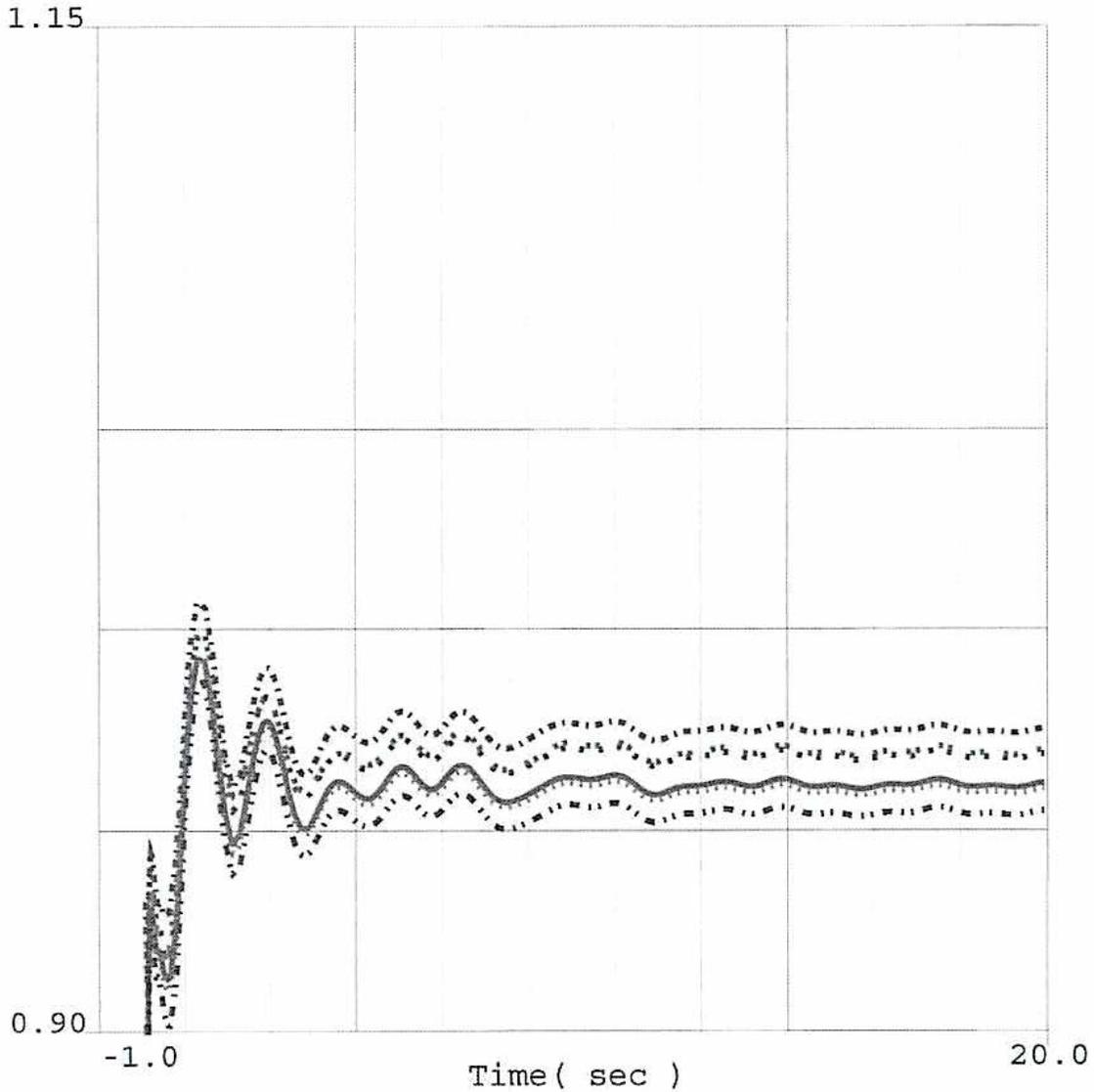


Line Style	Bus ID	Bus Number	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3	
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
...	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

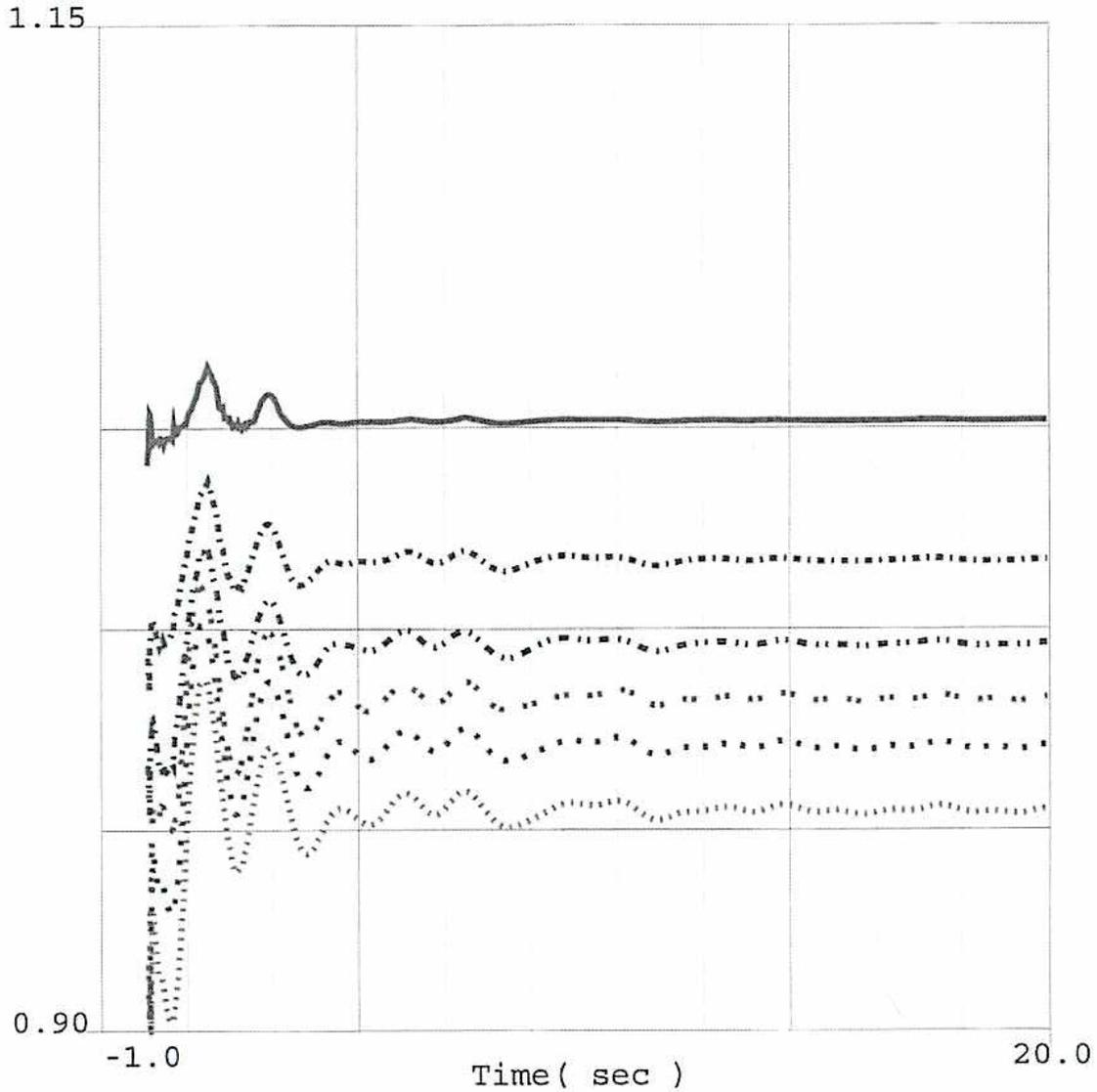


Line Style	Bus ID	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3
—	0.9 vbus 24006	ALMITOSE	230.0	1	1	1.15
....	0.9 vbus 24016	BARRE	230.0	1	1	1.15
..	0.9 vbus 24025	CHINO	230.0	1	1	1.15
...	0.9 vbus 24056	ETIWANDA	230.0	1	1	1.15
---	0.9 vbus 24074	LA FRESA	230.0	1	1	1.15
---	0.9 vbus 24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

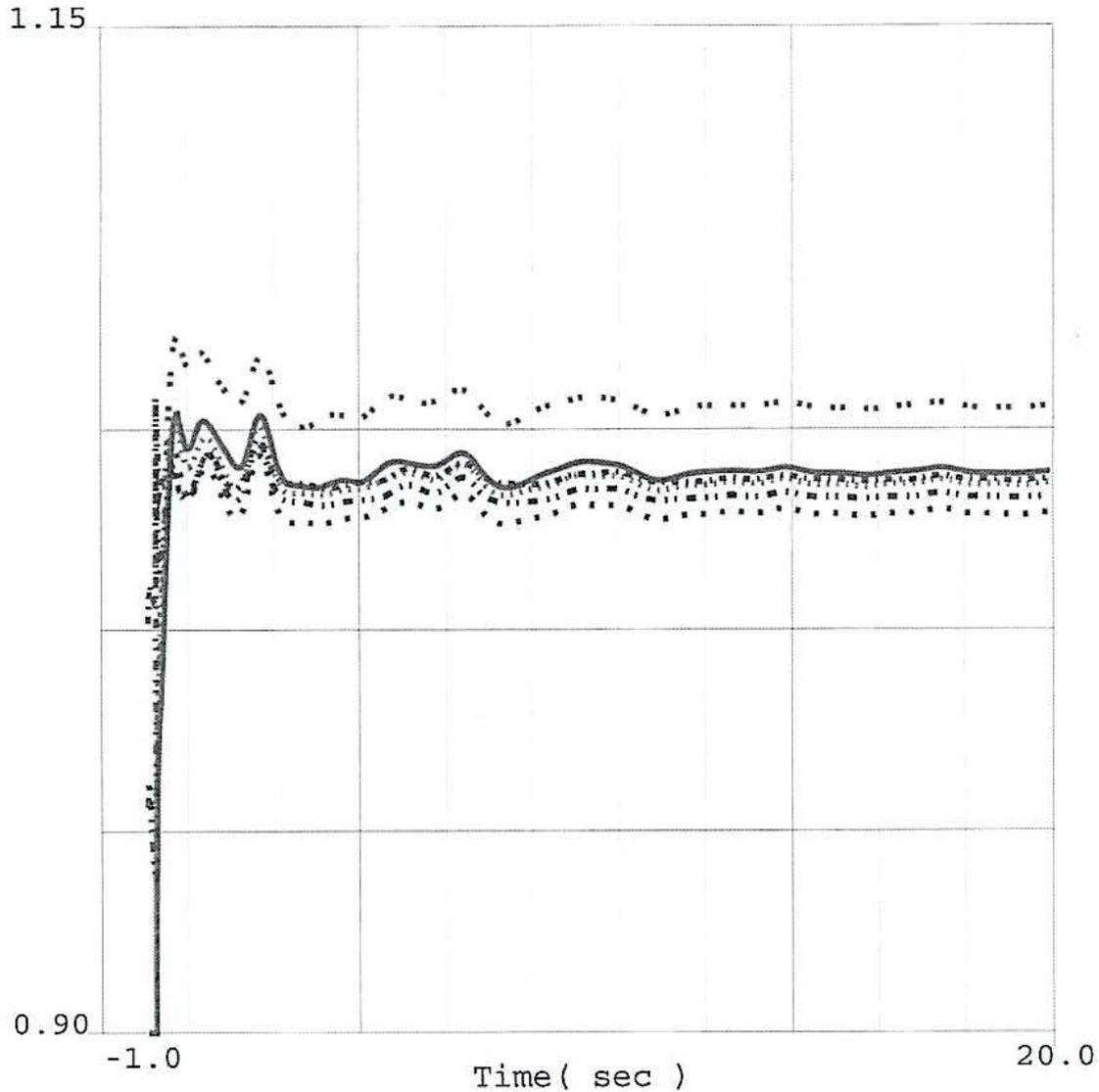


Line Style	Bus ID	Bus Name	Initial Voltage	Final Voltage	Time (sec)
—	0.9	vbus 24235 RECTOR	230.0	1	1.15
....	0.9	vbus 25201 LEWIS	230.0	1	1.15
--	0.9	vbus 24044 ELLIS	230.0	1	1.15
..	0.9	vbus 24134 SANTIAGO	230.0	1	1.15
---	0.9	vbus 24087 MAGUNDEN	230.0	1	1.15
---	0.9	vbus 24403 BAILEY	230.0	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 500



—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)

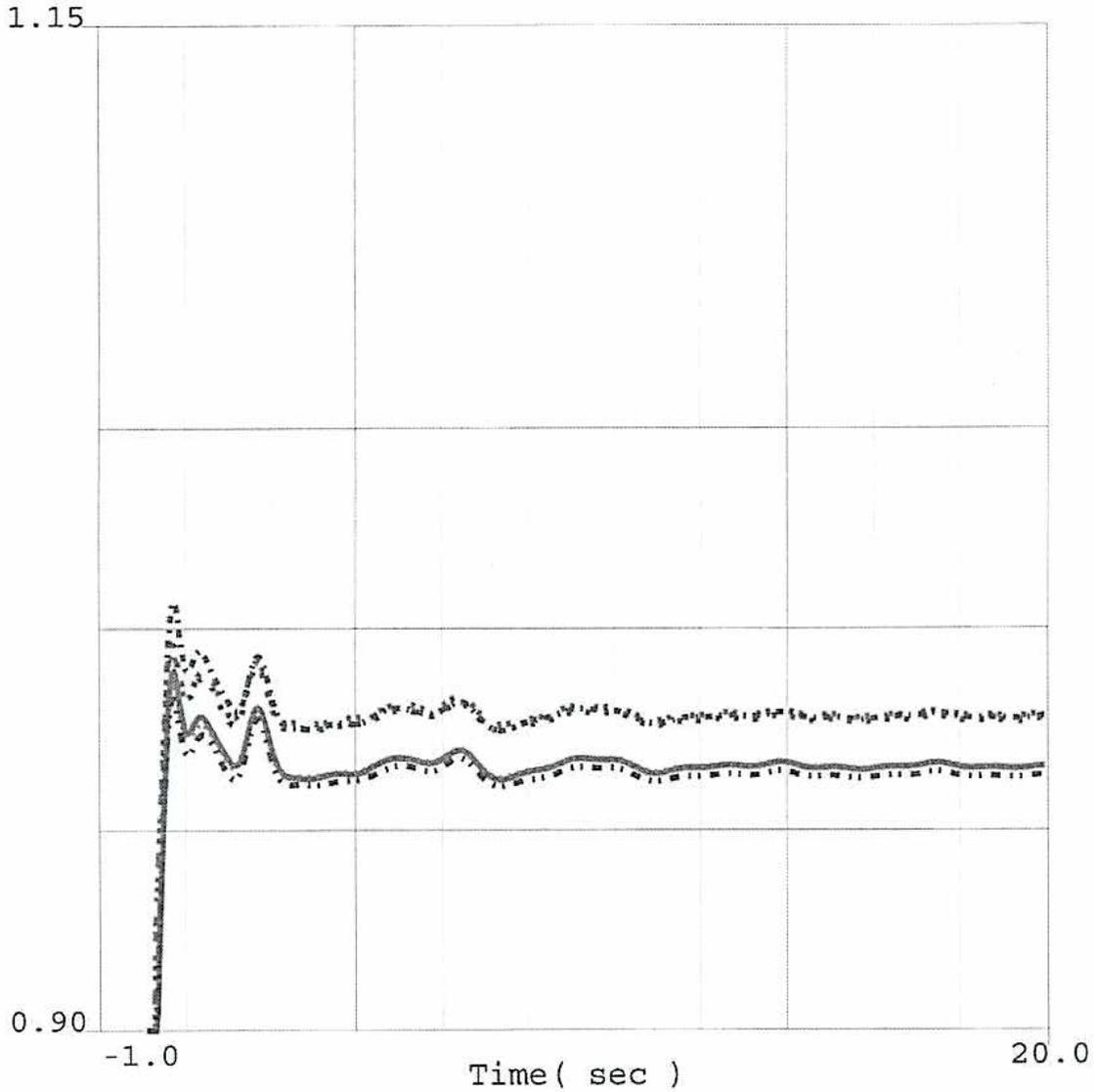
SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW

[S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]

[SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

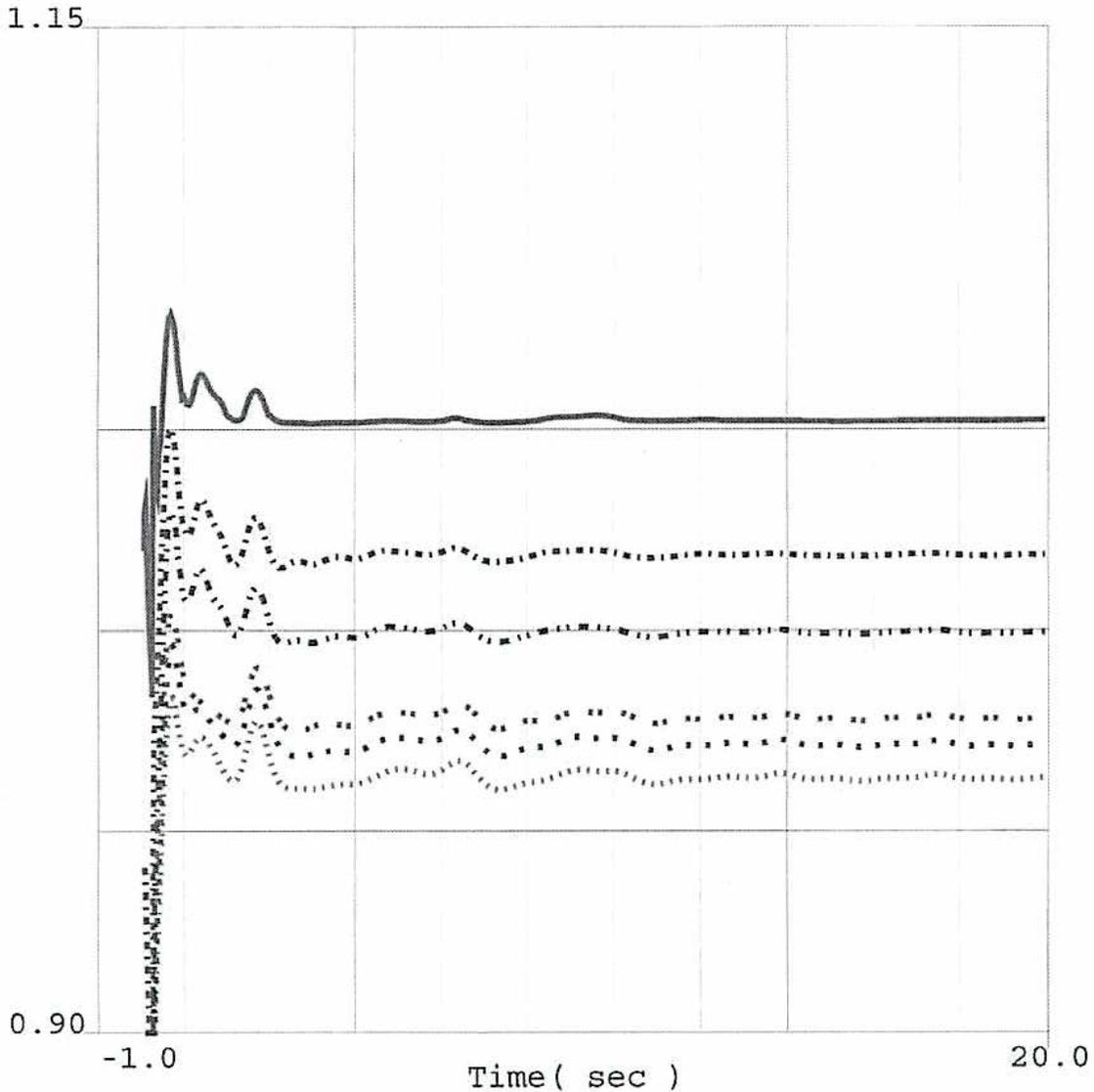


Line Style	Bus ID	Bus Name	Mag	Phase	Angle	Value
—	0.9	vbus 24006	ALMITOSE	230.0	1	1.15
....	0.9	vbus 24016	BARRE	230.0	1	1.15
..	0.9	vbus 24025	CHINO	230.0	1	1.15
...	0.9	vbus 24056	ETIWANDA	230.0	1	1.15
---	0.9	vbus 24074	LA FRESA	230.0	1	1.15
---	0.9	vbus 24137	SERRANO	230.0	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

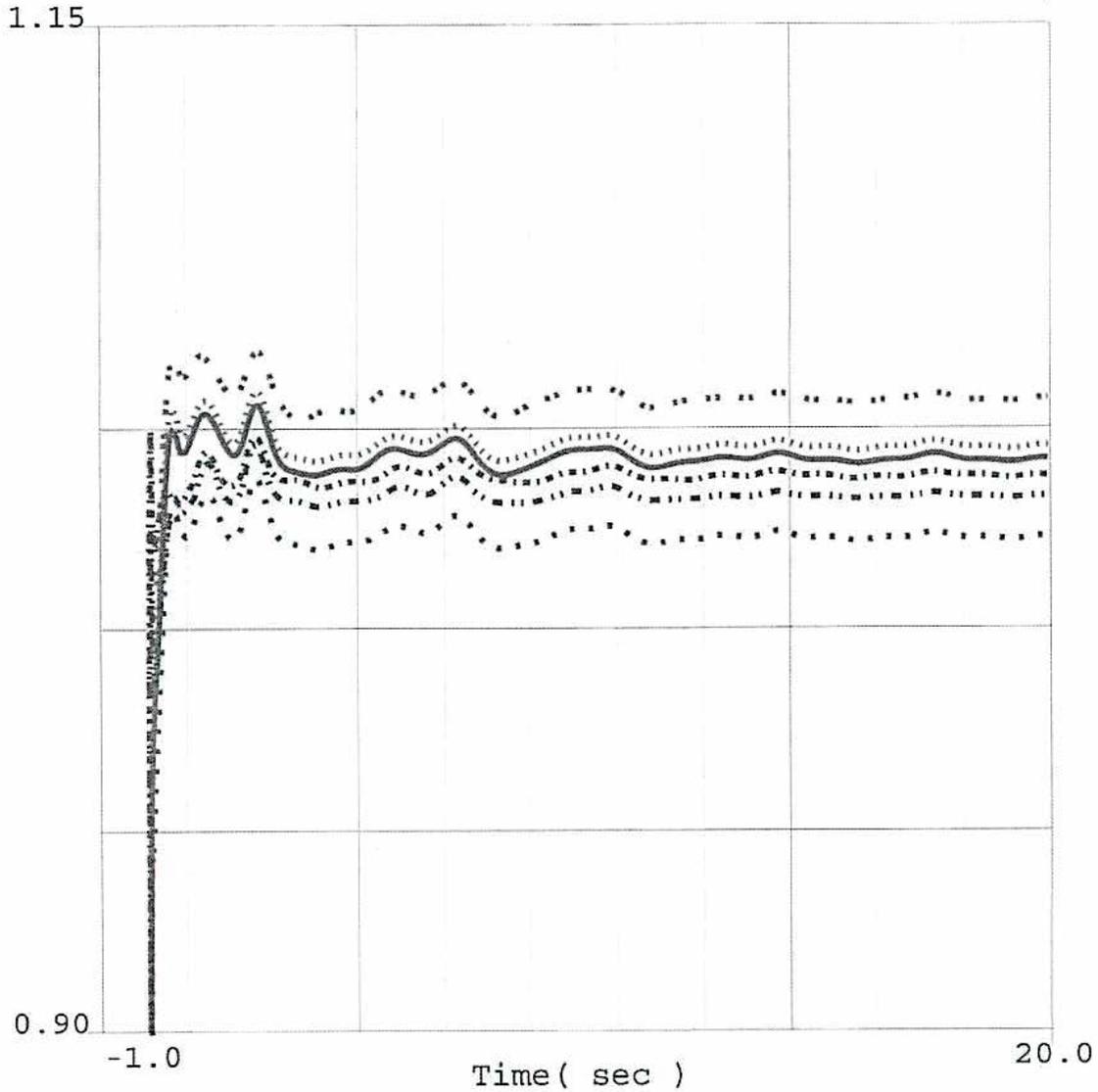


Line Style	Bus ID	Bus Name	Initial Value	Final Value	Other 1	Other 2	Other 3
—	0.9	vbus 24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus 25201	LEWIS	230.0	1	1	1.15
--	0.9	vbus 24044	ELLIS	230.0	1	1	1.15
..	0.9	vbus 24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus 24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus 24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 500

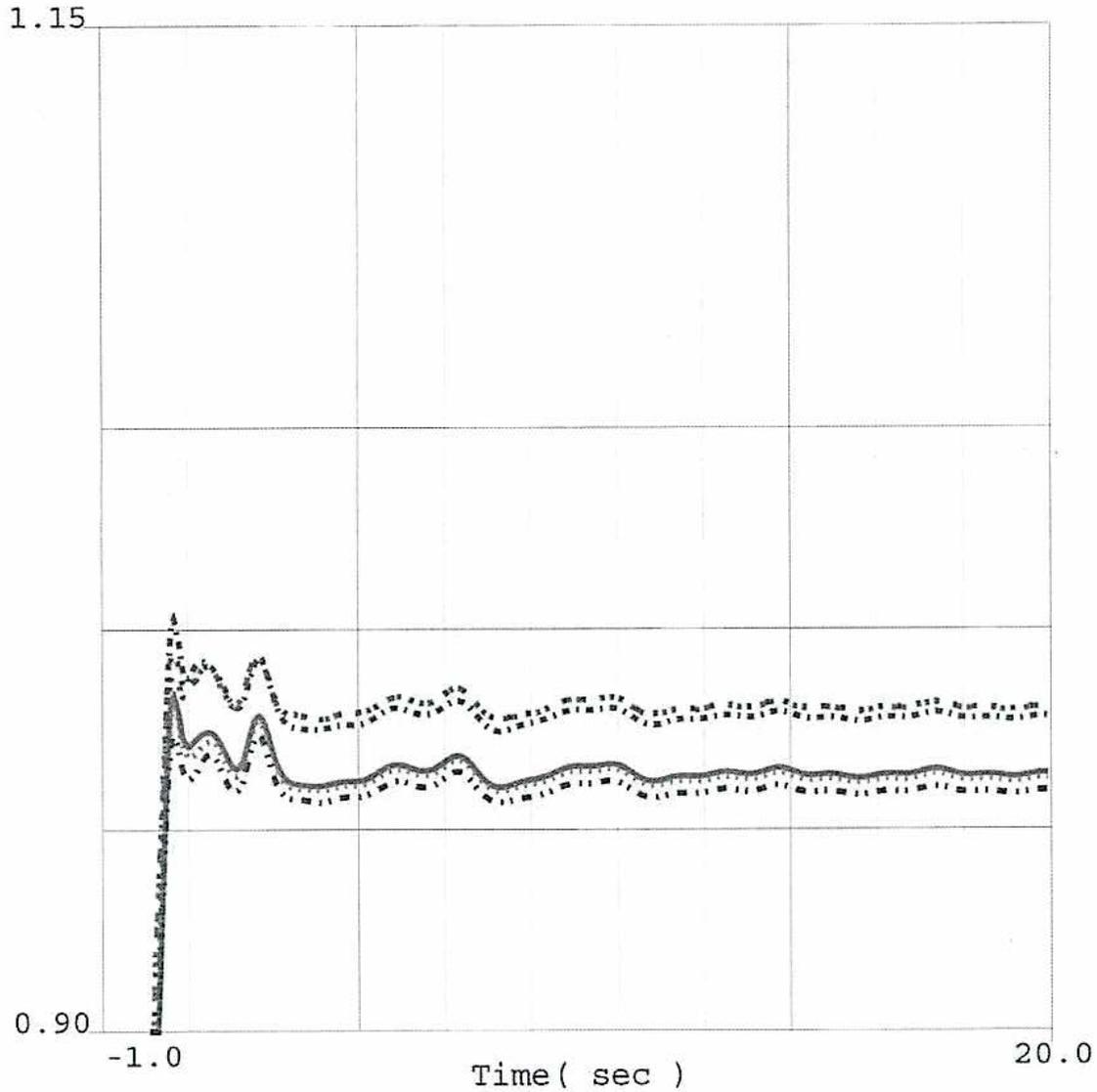


Line Style	Bus ID	Bus Number	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3	
—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
--	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
...	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

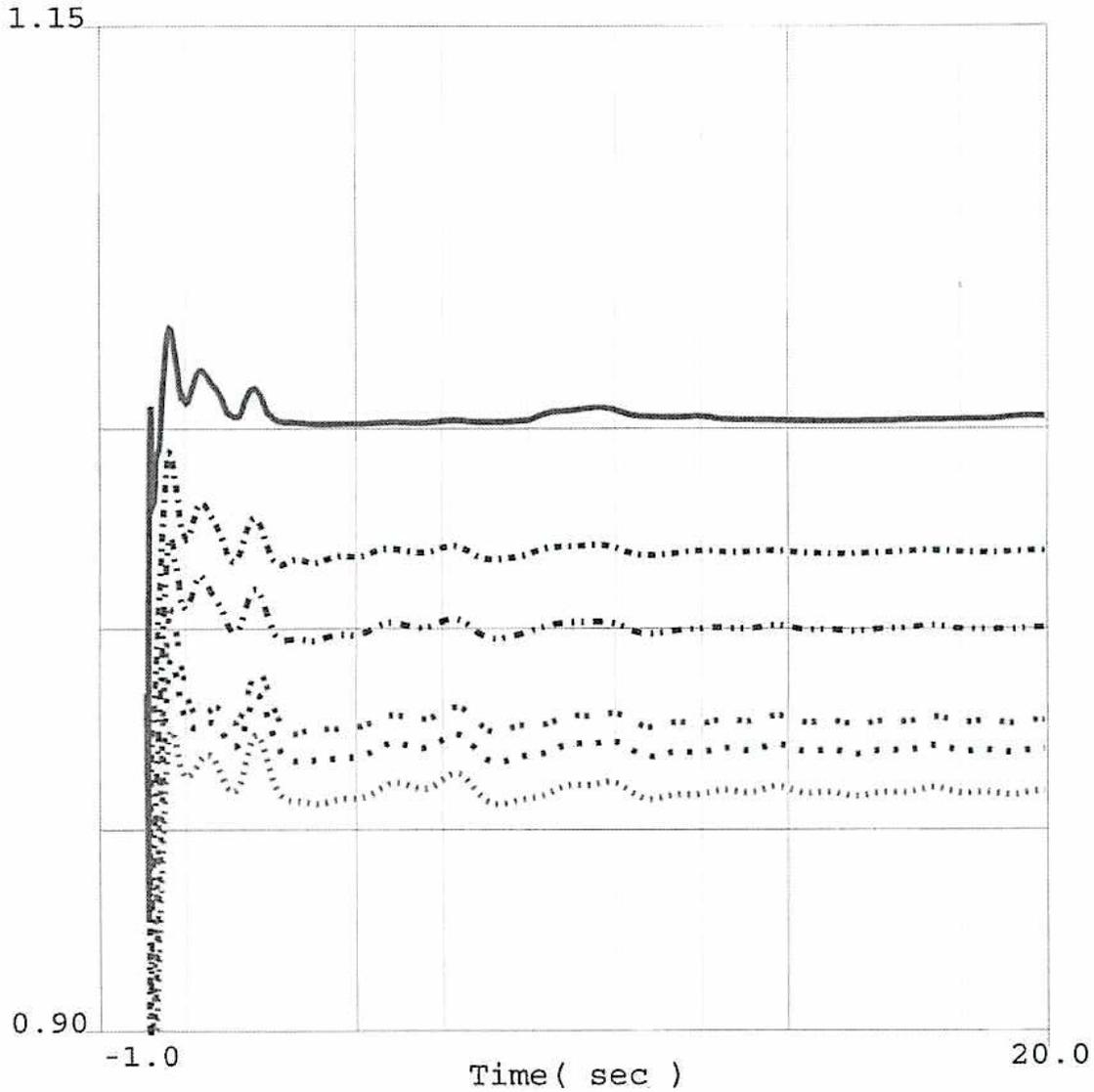


—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
--	0.9	vbus	24025	CHINO	230.0	1	1	1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

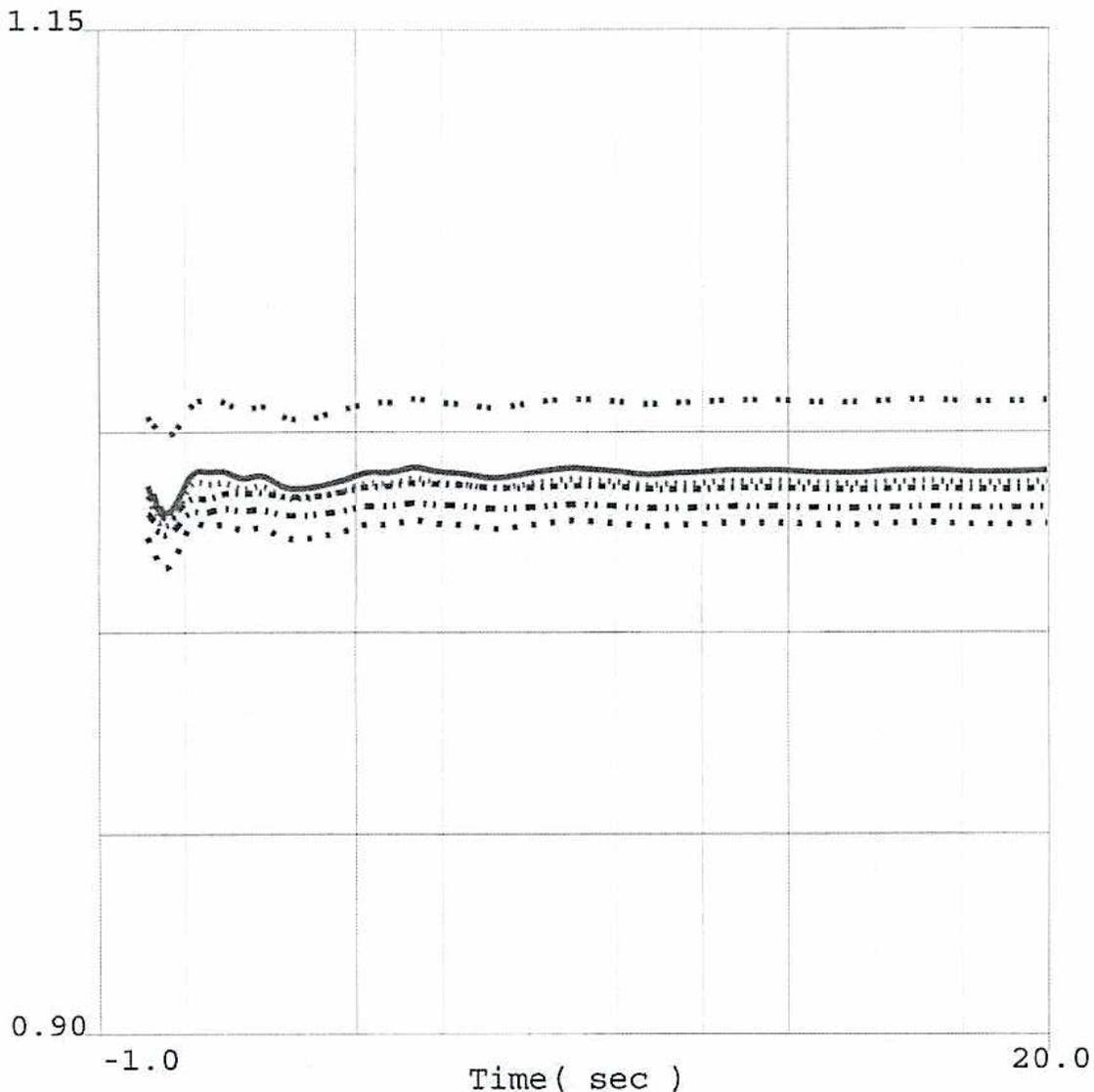


—	0.9	vbus	24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus	25201	LEWIS	230.0	1	1	1.15
..	0.9	vbus	24044	ELLIS	230.0	1	1	1.15
..	0.9	vbus	24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus	24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus	24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 500

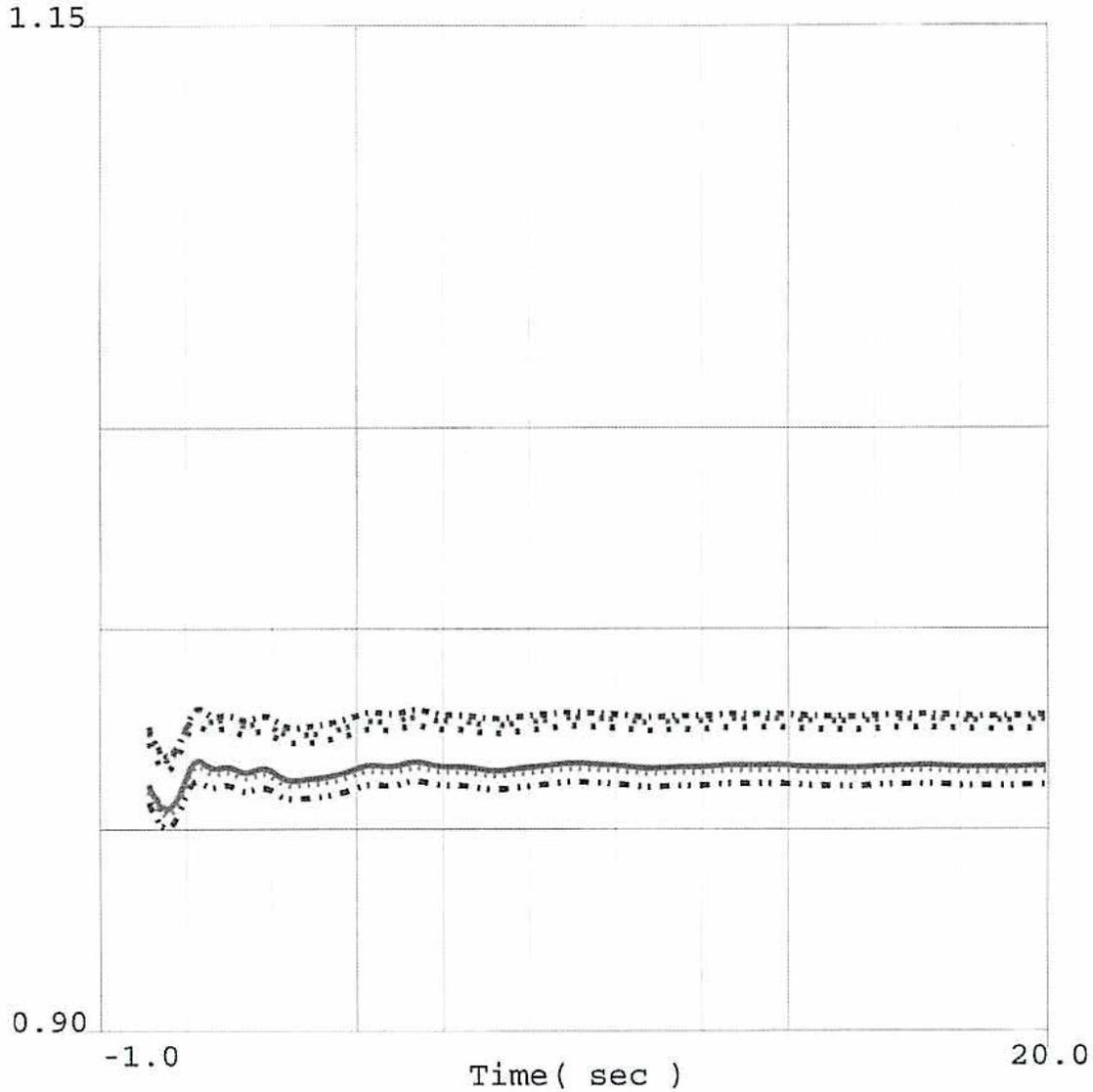


Line Style	Busbar ID	Busbar Name	Voltage (kV)	Phase 1	Phase 2	Phase 3
—	0.9 vbus 24086	LUGO	500.0	1	1	1.15
....	0.9 vbus 24092	MIRALOMA	500.0	1	1	1.15
..	0.9 vbus 24138	SERRANO	500.0	1	1	1.15
..	0.9 vbus 24156	VINCENT	500.0	1	1	1.15
---	0.9 vbus 24801	DEVERS	500.0	1	1	1.15
---	0.9 vbus 24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

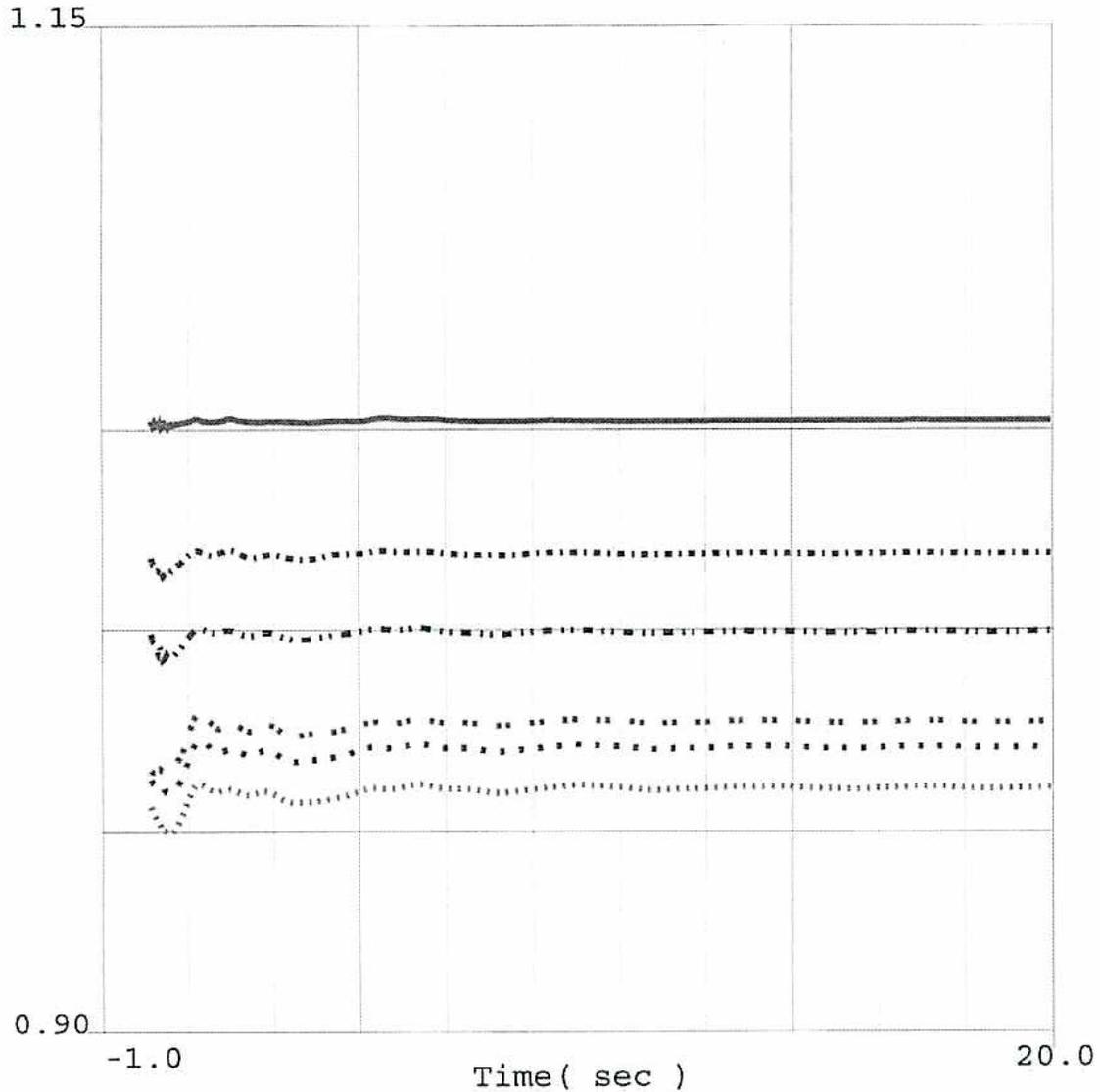


—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
--	0.9	vbus	24025	CHINO	230.0	1	1	1.15
..	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
...	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

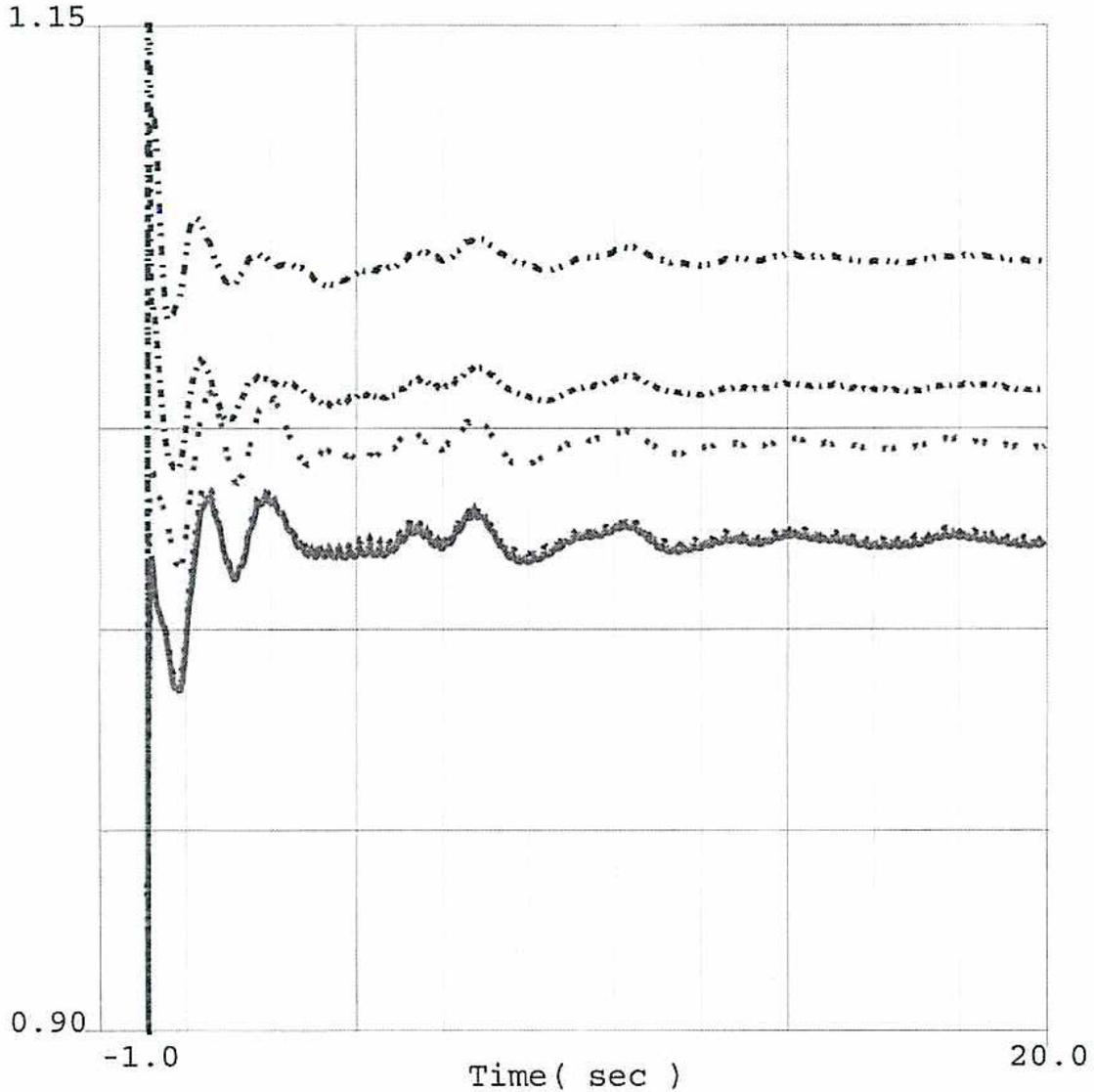


Line Style	Bus ID	Bus Name	Value	Col 1	Col 2	Col 3
—	0.9	vbus 24235	RECTOR	230.0	1	1 1.15
....	0.9	vbus 25201	LEWIS	230.0	1	1 1.15
--	0.9	vbus 24044	ELLIS	230.0	1	1 1.15
...	0.9	vbus 24134	SANTIAGO	230.0	1	1 1.15
---	0.9	vbus 24087	MAGUNDEN	230.0	1	1 1.15
---	0.9	vbus 24403	BAILEY	230.0	1	1 1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 500

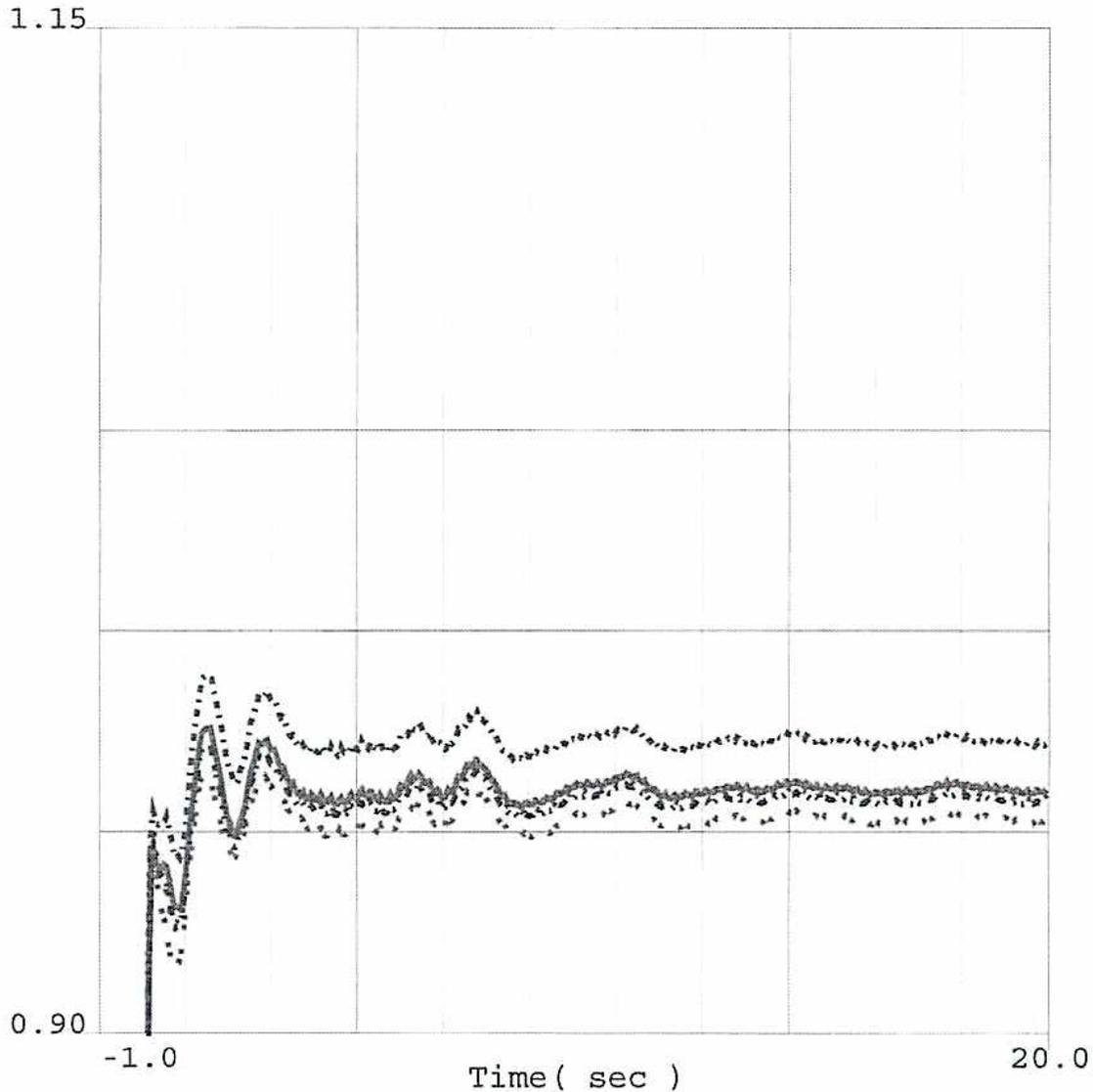


—	0.9	vbus	24086	LUGO	500.0	1	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1	1.15
...	0.9	vbus	24156	VINCENT	500.0	1	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

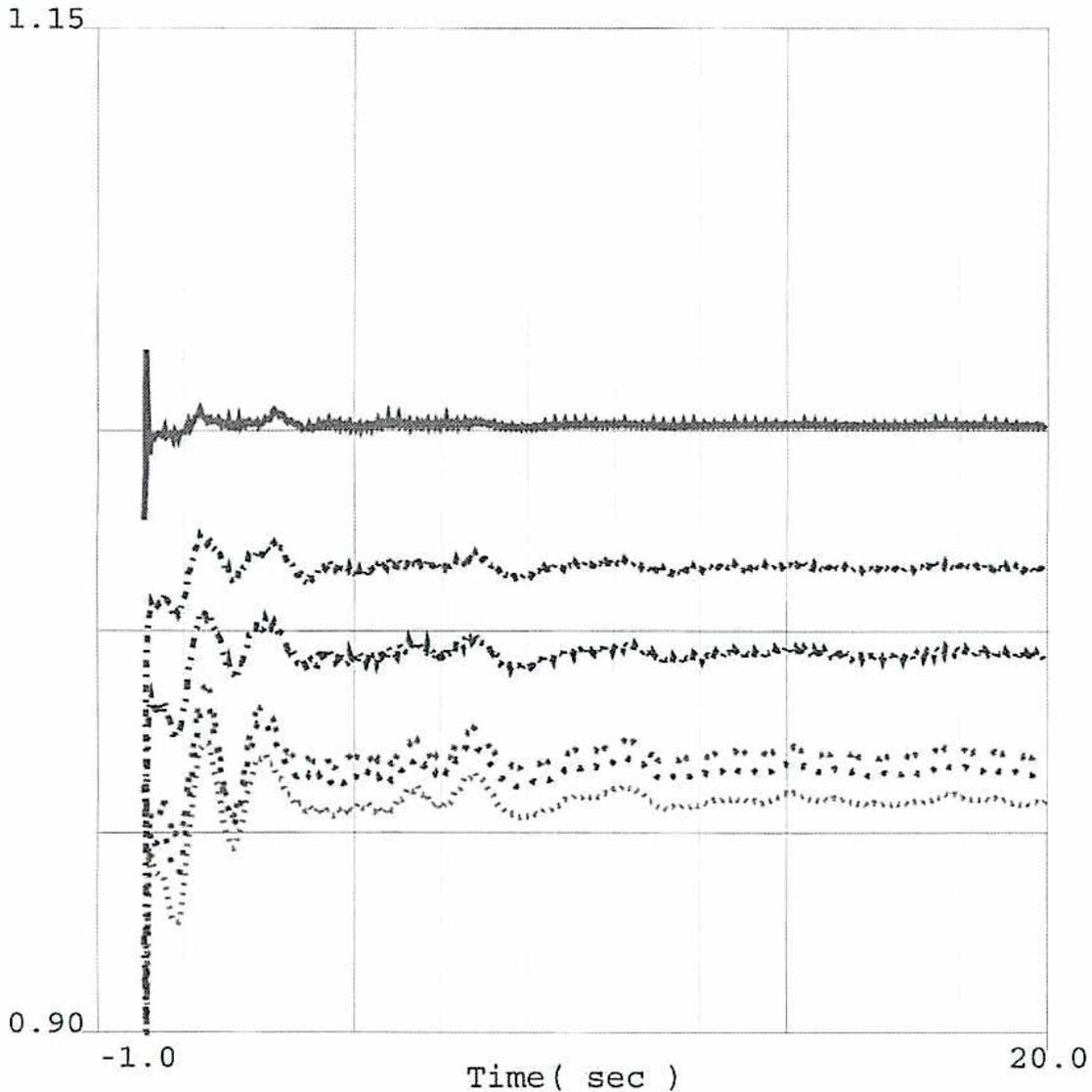


—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
--	0.9	vbus	24025	CHINO	230.0	1	1	1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

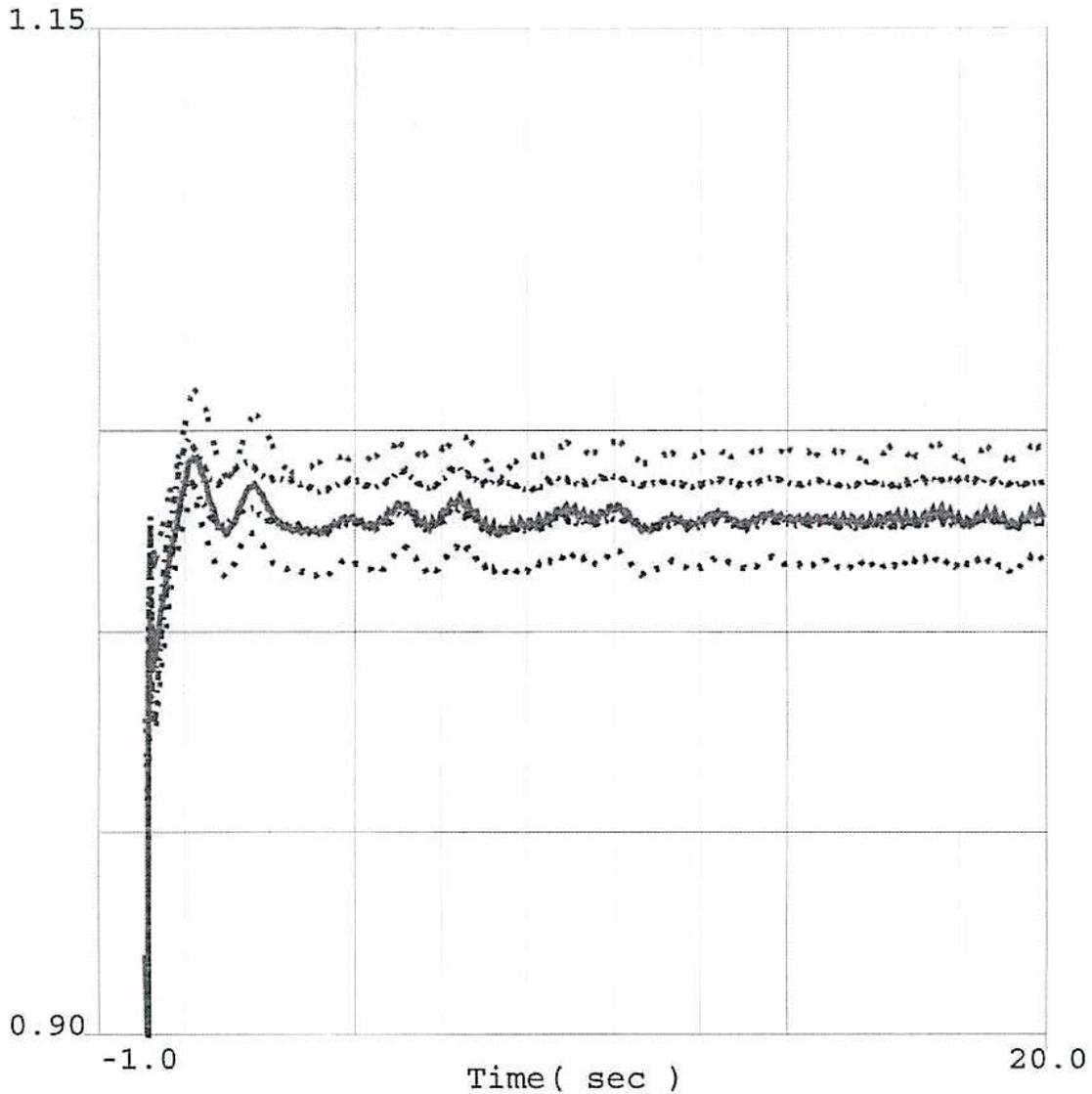


Line Style	Bus ID	Bus Name	Value 1	Value 2	Value 3	Value 4
—	0.9 vbus 24235	RECTOR	230.0	1	1	1.15
....	0.9 vbus 25201	LEWIS	230.0	1	1	1.15
..	0.9 vbus 24044	ELLIS	230.0	1	1	1.15
...	0.9 vbus 24134	SANTIAGO	230.0	1	1	1.15
---	0.9 vbus 24087	MAGUNDEN	230.0	1	1	1.15
---	0.9 vbus 24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Pre Project)
 SCE [LOAD 14837 XCHGE -5387 GEN 10616] [AA 1603V 457M 958D 916VA]MW
 [S.LUGO-1130MW] [N.LUGO 200MW] [N.SONGS 1679MW] [S.SONGS 461MW] [WOD 4926MW]
 [SYLMAR 1072] [VIC-LUGO 365] [EL-LUGO 885] [MHV-LUGO 879] [DV IMPORT 3813]MW



BUS_VOLT_MAG FOR SCE 500

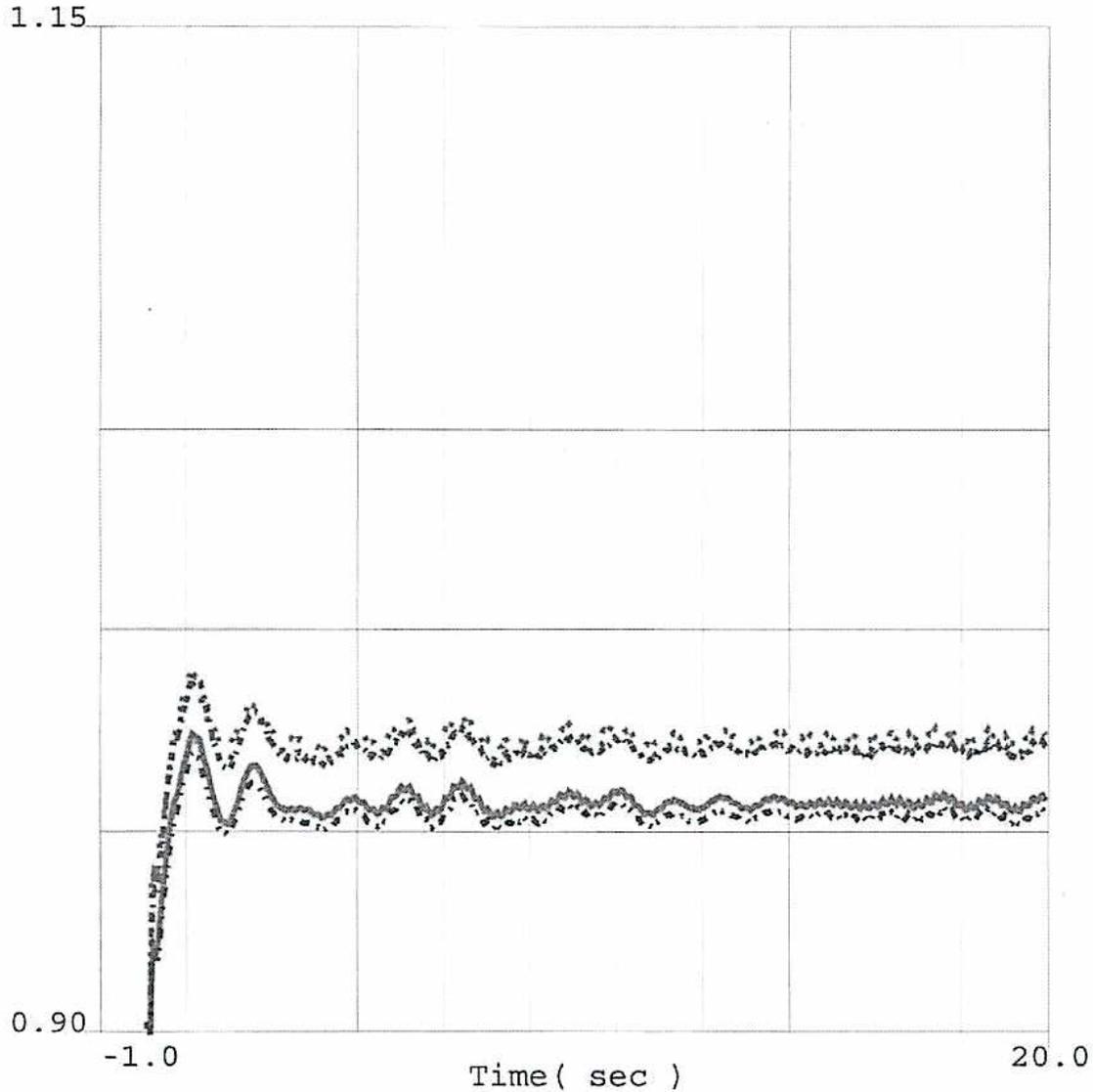


Line Style	Value	Bus Name	ID	Location	V	Phase	Mag
—	0.9	vbus	24086	LUGO	500.0	1	1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1.15
--	0.9	vbus	24138	SERRANO	500.0	1	1.15
...	0.9	vbus	24156	VINCENT	500.0	1	1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA] MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700] MW



BUS_VOLT_MAG FOR SCE 230 Part 1



—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
..	0.9	vbus	24025	CHINO	230.0	1	1	1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)

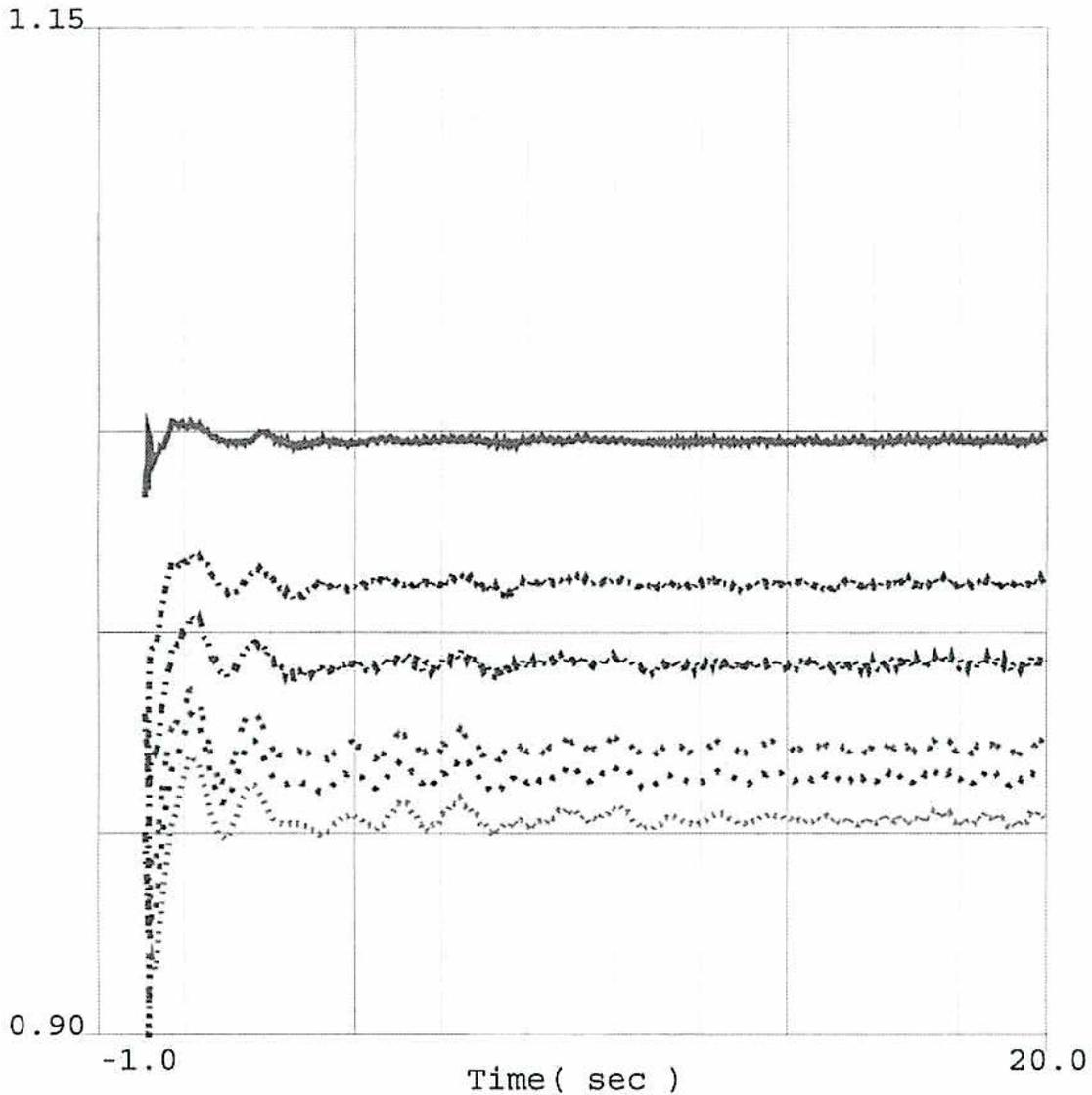
SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW

[S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]

[SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

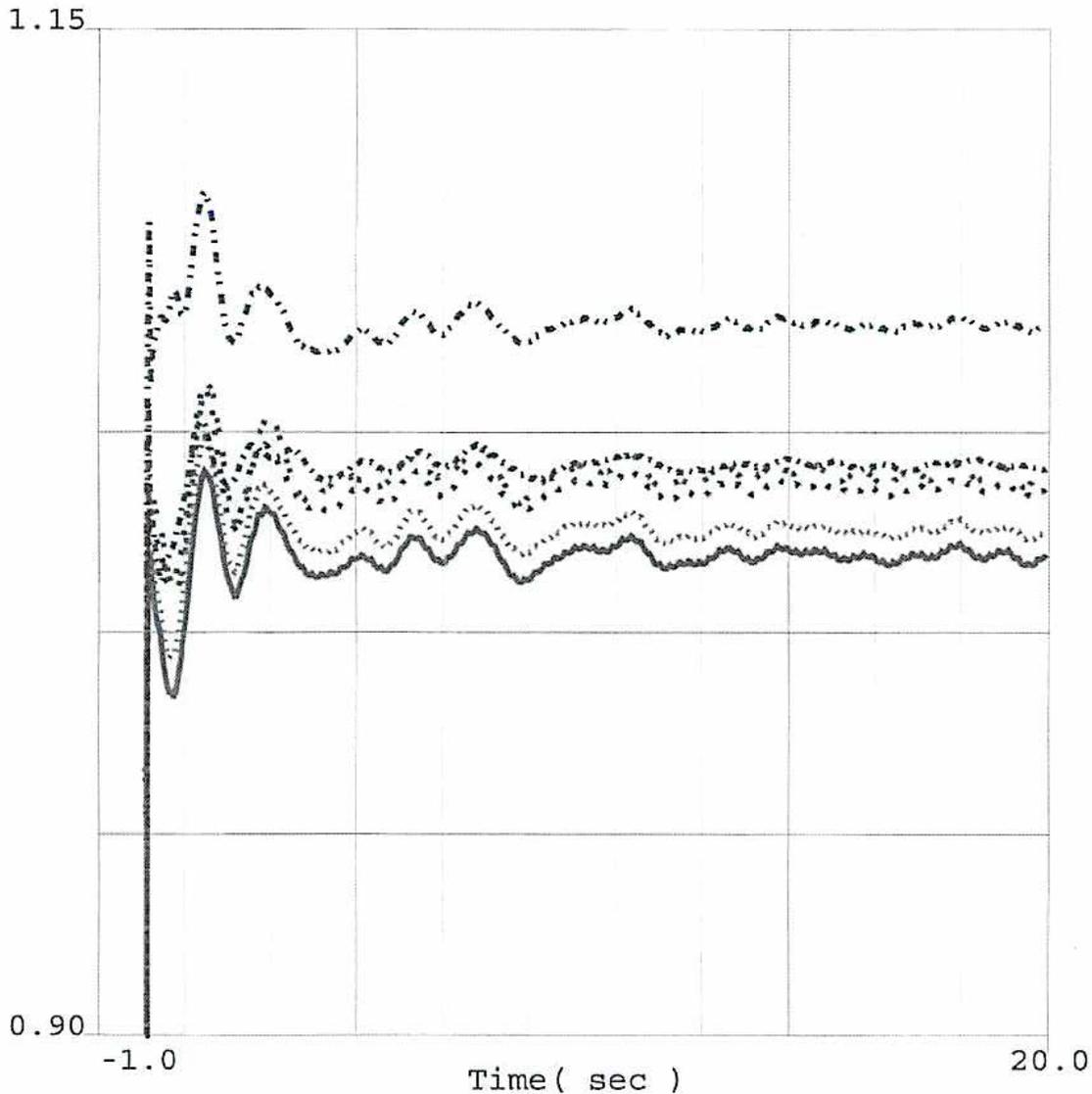


Line Style	Bus ID	Bus Name	Value	Col 1	Col 2	Col 3	
—	0.9	vbus 24235	RECTOR	230.0	1	1	1.15
....	0.9	vbus 25201	LEWIS	230.0	1	1	1.15
--	0.9	vbus 24044	ELLIS	230.0	1	1	1.15
..	0.9	vbus 24134	SANTIAGO	230.0	1	1	1.15
---	0.9	vbus 24087	MAGUNDEN	230.0	1	1	1.15
---	0.9	vbus 24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 500

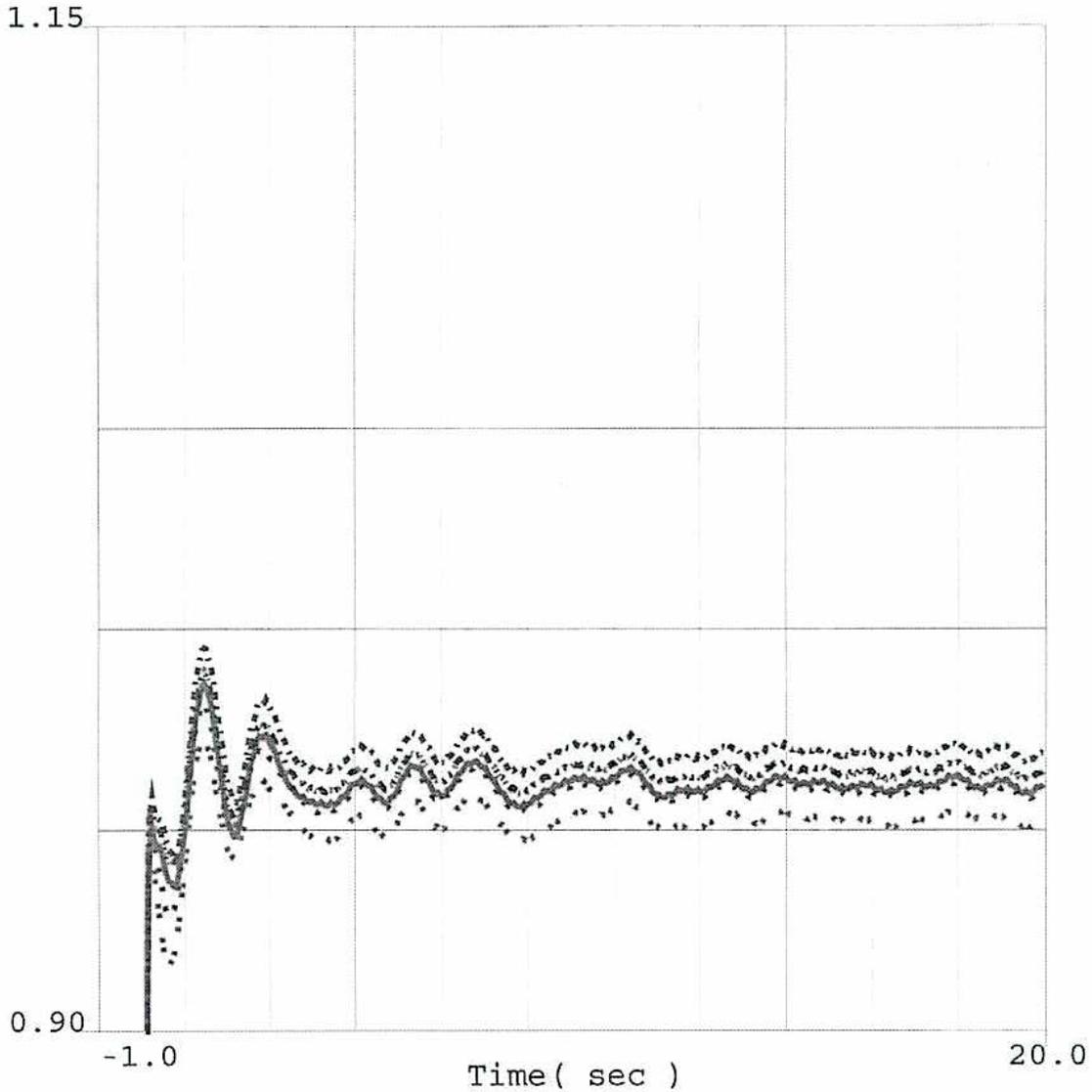


Line Style	Bus ID	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3
—	0.9	vbus 24086 LUGO	500.0	1	1	1.15
....	0.9	vbus 24092 MIRALOMA	500.0	1	1	1.15
--	0.9	vbus 24138 SERRANO	500.0	1	1	1.15
..	0.9	vbus 24156 VINCENT	500.0	1	1	1.15
---	0.9	vbus 24801 DEVERS	500.0	1	1	1.15
---	0.9	vbus 24151 VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

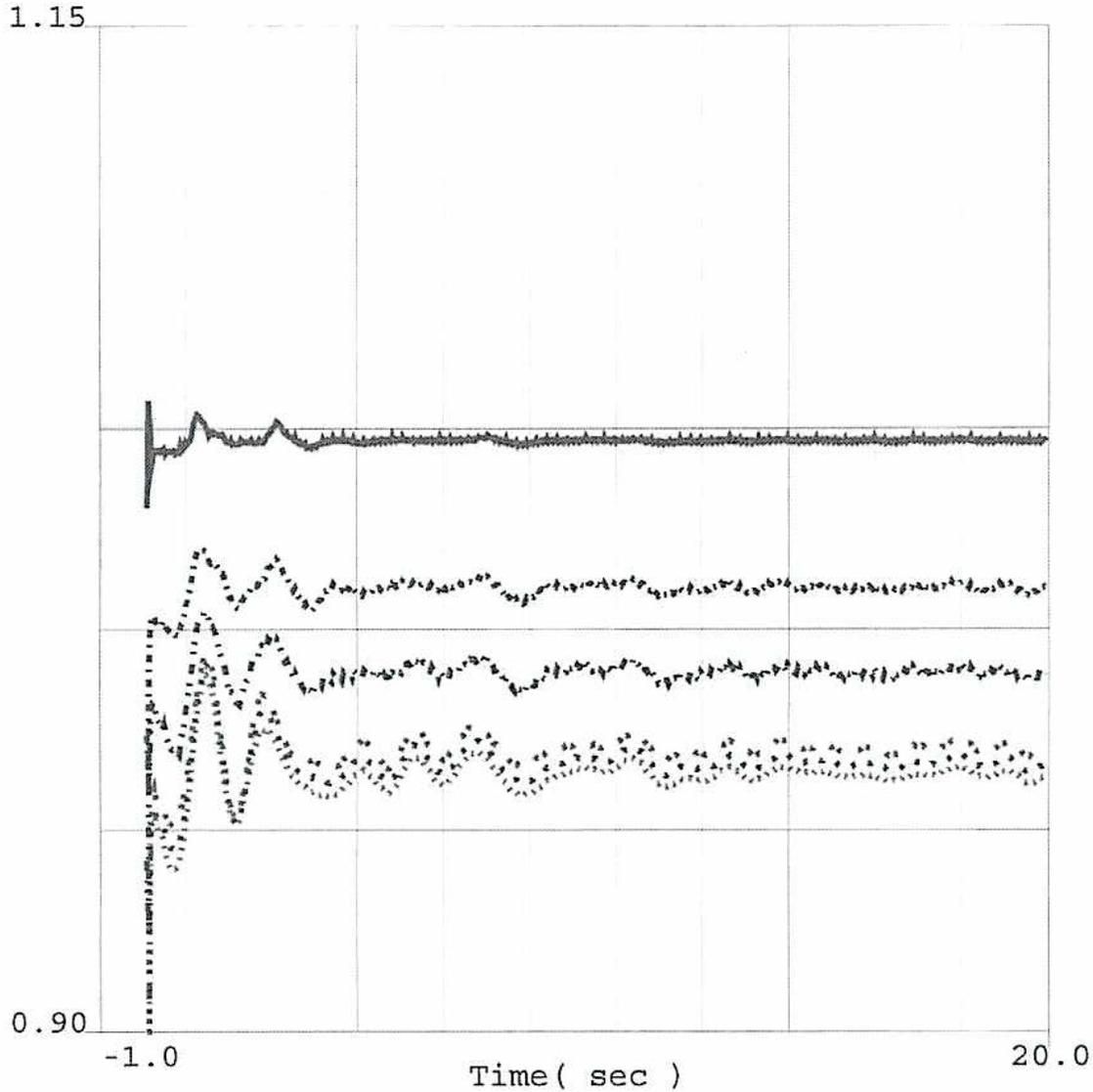


Line Style	Voltage (kV)	Bus Name	Bus ID	Location	V1 (kV)	V2 (kV)	V3 (kV)
—	0.9	vbus	24006	ALMITOSE	230.0	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1.15
--	0.9	vbus	24025	CHINO	230.0	1	1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

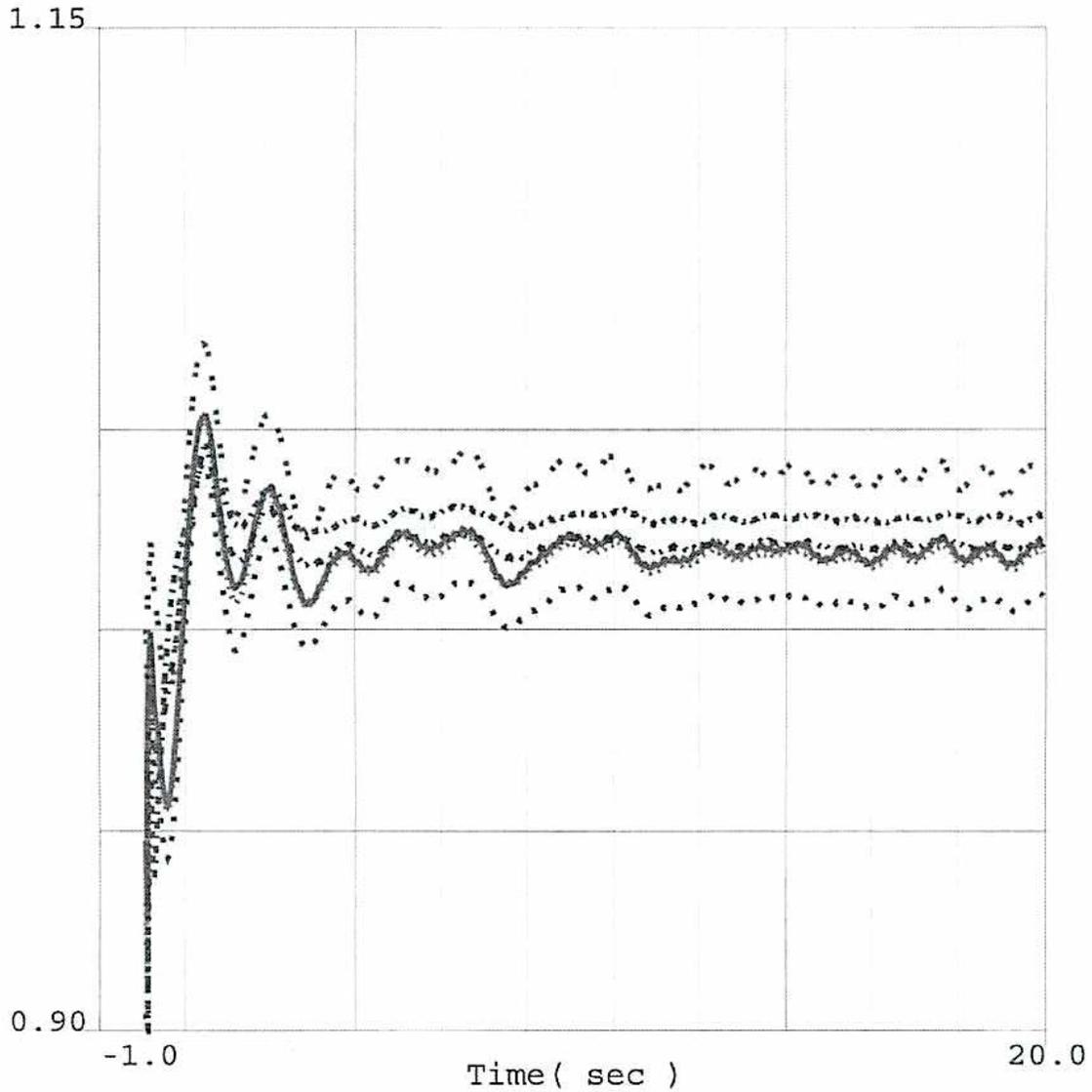


Line Style	Bus ID	Bus Name	Mag	Phase 1	Phase 2	Phase 3
—	0.9 vbus 24235	RECTOR	230.0	1	1	1.15
....	0.9 vbus 25201	LEWIS	230.0	1	1	1.15
--	0.9 vbus 24044	ELLIS	230.0	1	1	1.15
..	0.9 vbus 24134	SANTIAGO	230.0	1	1	1.15
---	0.9 vbus 24087	MAGUNDEN	230.0	1	1	1.15
---	0.9 vbus 24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 500

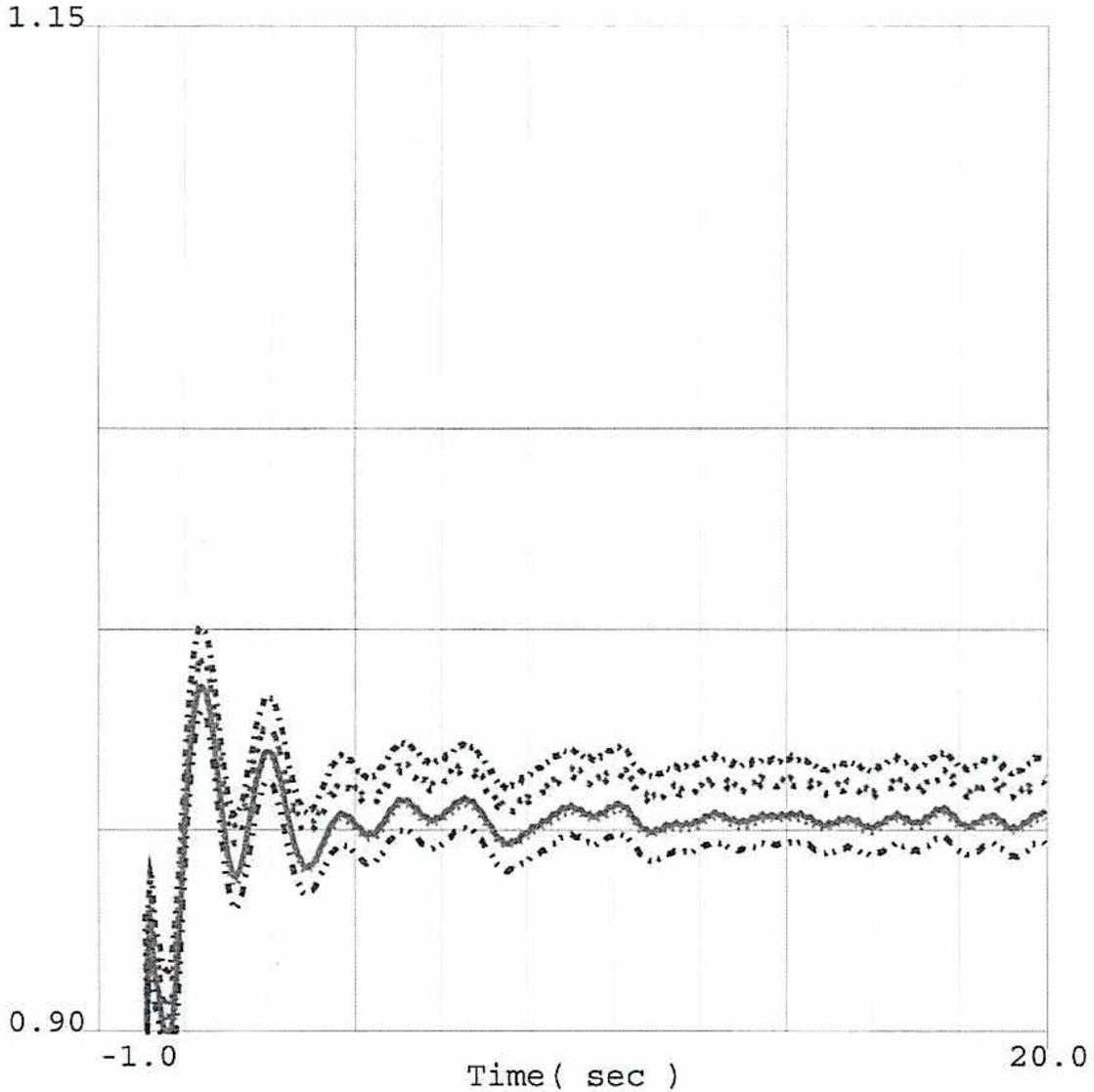


Line Style	Bus ID	Bus Name	Voltage (kV)	Phase 1	Phase 2	Phase 3
—	0.9	vbus 24086	LUGO	500.0	1	1.15
....	0.9	vbus 24092	MIRALOMA	500.0	1	1.15
--	0.9	vbus 24138	SERRANO	500.0	1	1.15
...	0.9	vbus 24156	VINCENT	500.0	1	1.15
---	0.9	vbus 24801	DEVERS	500.0	1	1.15
---	0.9	vbus 24151	VALLEYSC	500.0	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 230 Part 1

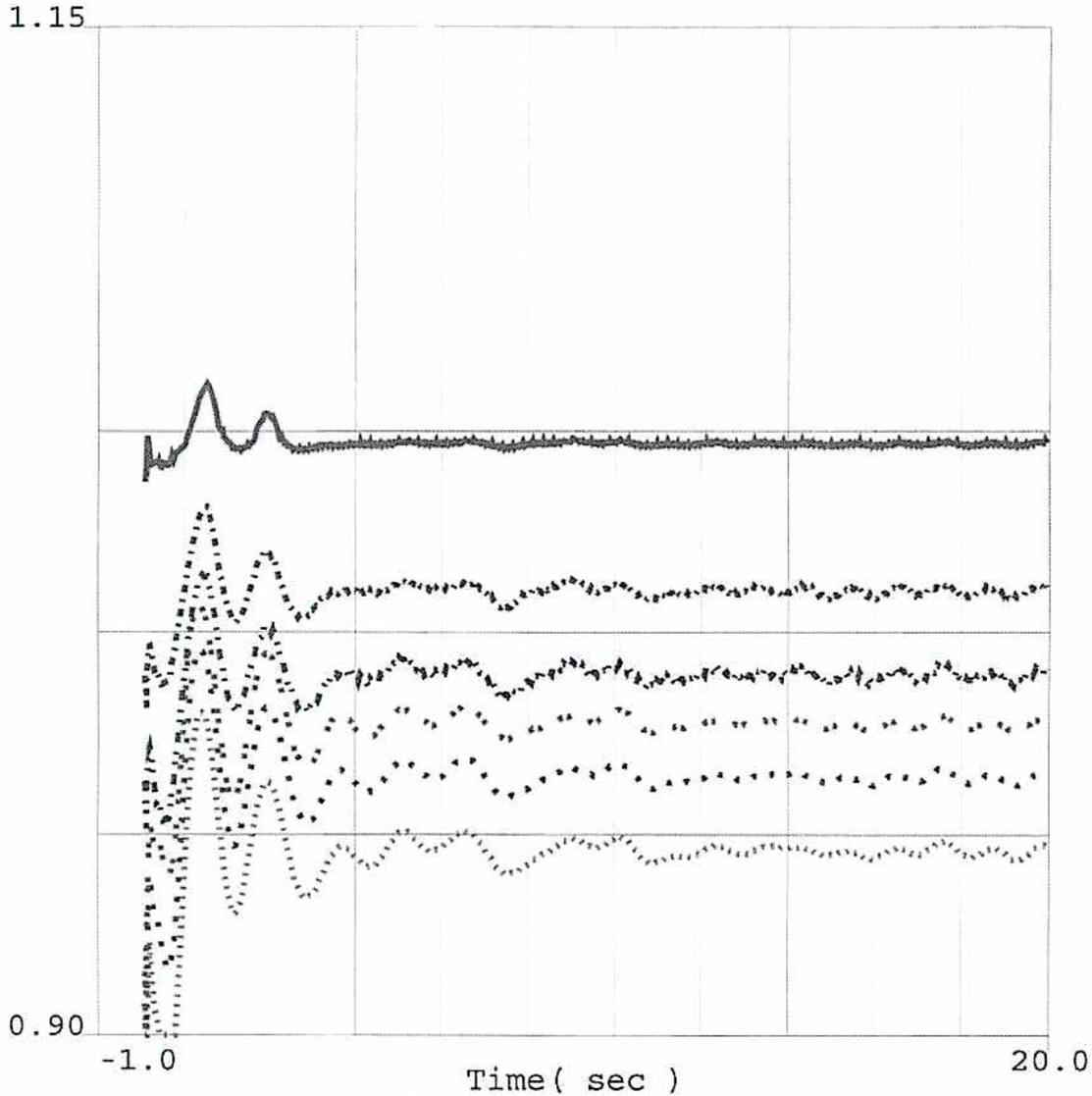


Line Style	Mag	Bus	ID	Name	V	1	2	Mag
—	0.9	vbus	24006	ALMITOSE	230.0	1	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1	1.15
- - -	0.9	vbus	24025	CHINO	230.0	1	1	1.15
- - -	0.9	vbus	24056	ETIWANDA	230.0	1	1	1.15
- - -	0.9	vbus	24074	LA FRESA	230.0	1	1	1.15
- - -	0.9	vbus	24137	SERRANO	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

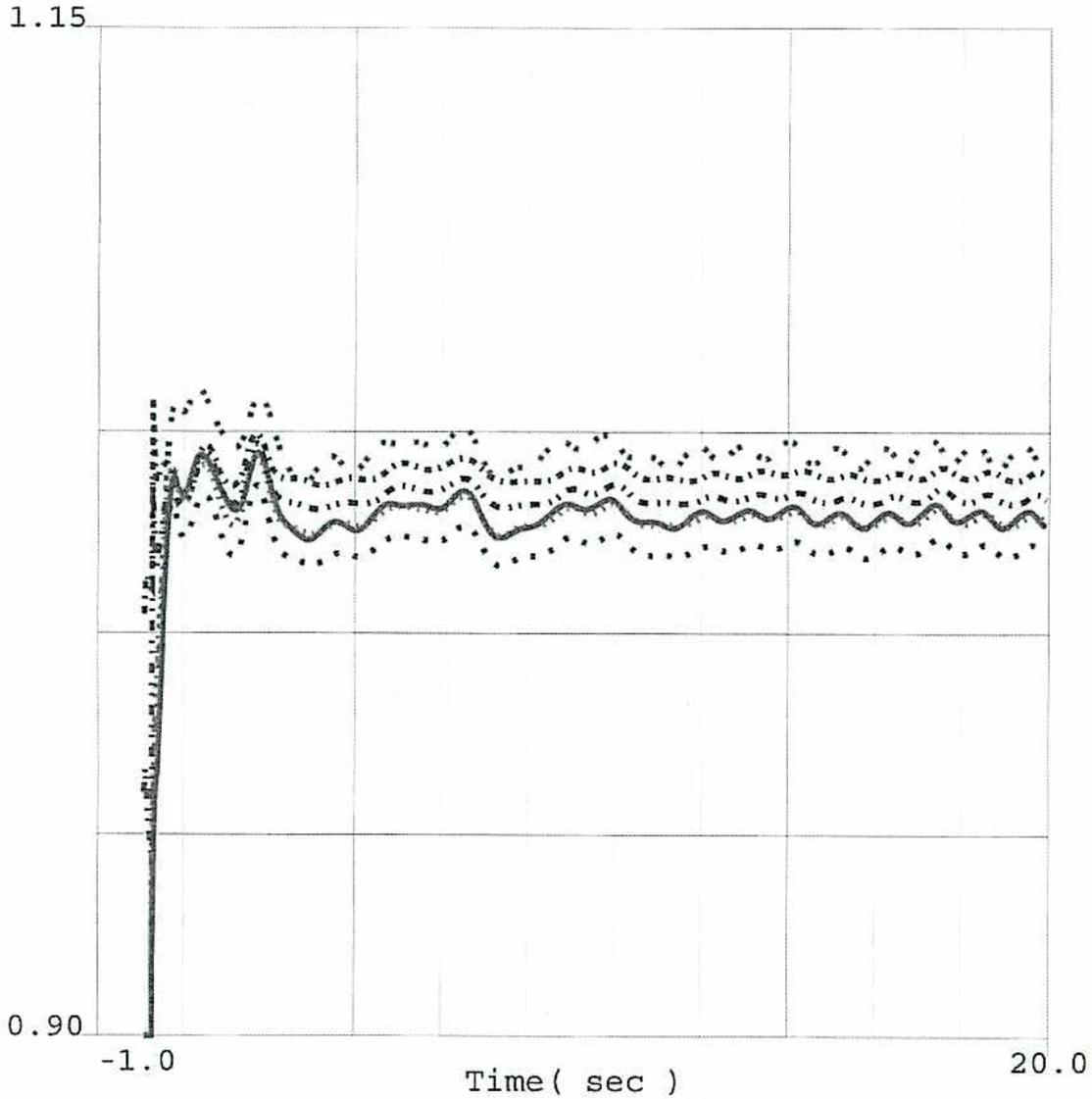


Line Style	Bus ID	Bus Name	Value 1	Value 2	Value 3
—	0.9 vbus 24235	RECTOR	230.0	1	1.15
....	0.9 vbus 25201	LEWIS	230.0	1	1.15
..	0.9 vbus 24044	ELLIS	230.0	1	1.15
...	0.9 vbus 24134	SANTIAGO	230.0	1	1.15
---	0.9 vbus 24087	MAGUNDEN	230.0	1	1.15
---	0.9 vbus 24403	BAILEY	230.0	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 500

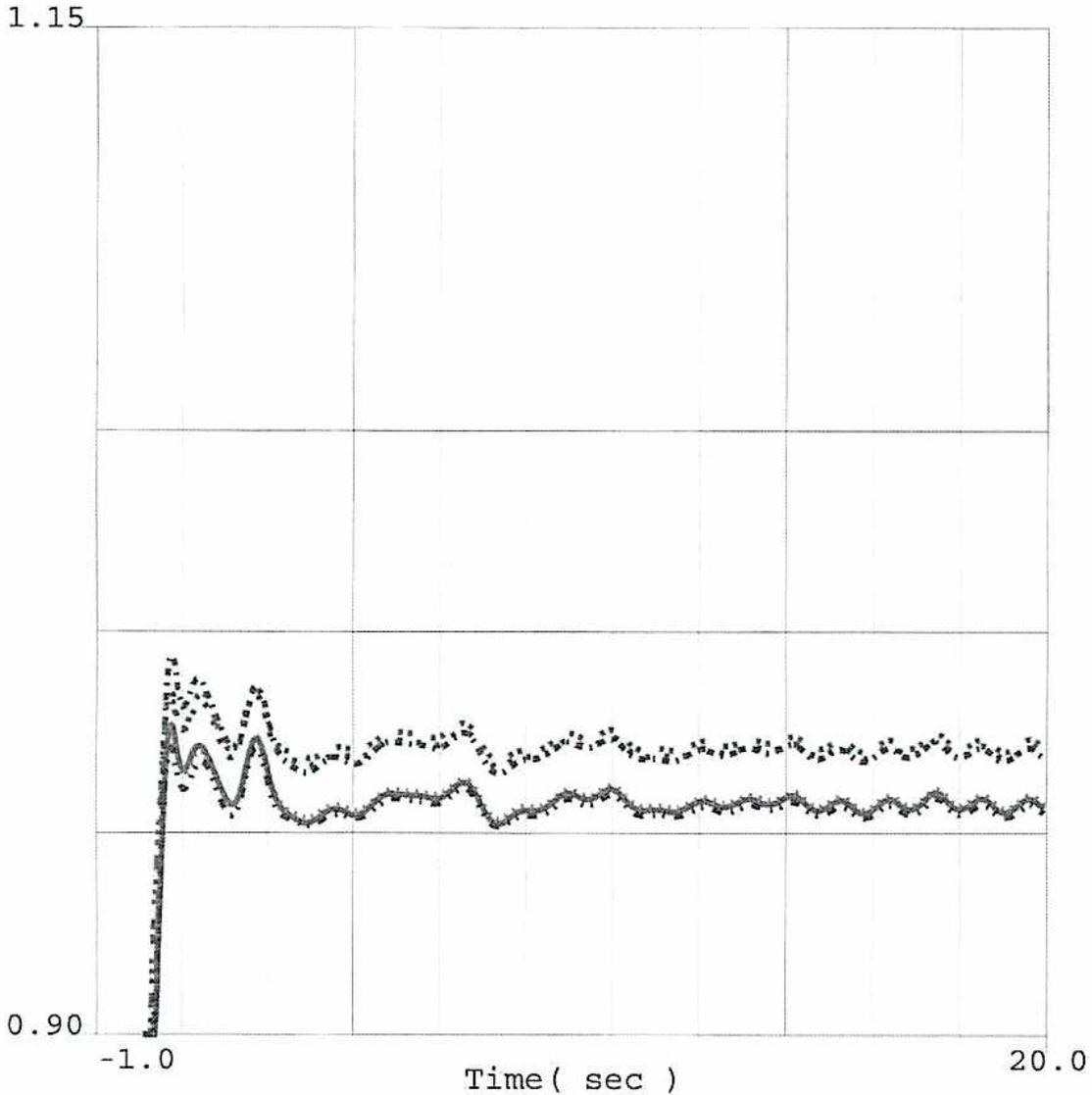


Line	Bus	ID	Name	Mag	Phase	Angle	Value
— 0.9	vbus	24086	LUGO	500.0	1	1	1.15
.... 0.9	vbus	24092	MIRALOMA	500.0	1	1	1.15
.. 0.9	vbus	24138	SERRANO	500.0	1	1	1.15
... 0.9	vbus	24156	VINCENT	500.0	1	1	1.15
--- 0.9	vbus	24801	DEVERS	500.0	1	1	1.15
... 0.9	vbus	24151	VALLEYSC	500.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA] MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700] MW



BUS_VOLT_MAG FOR SCE 230 Part 1

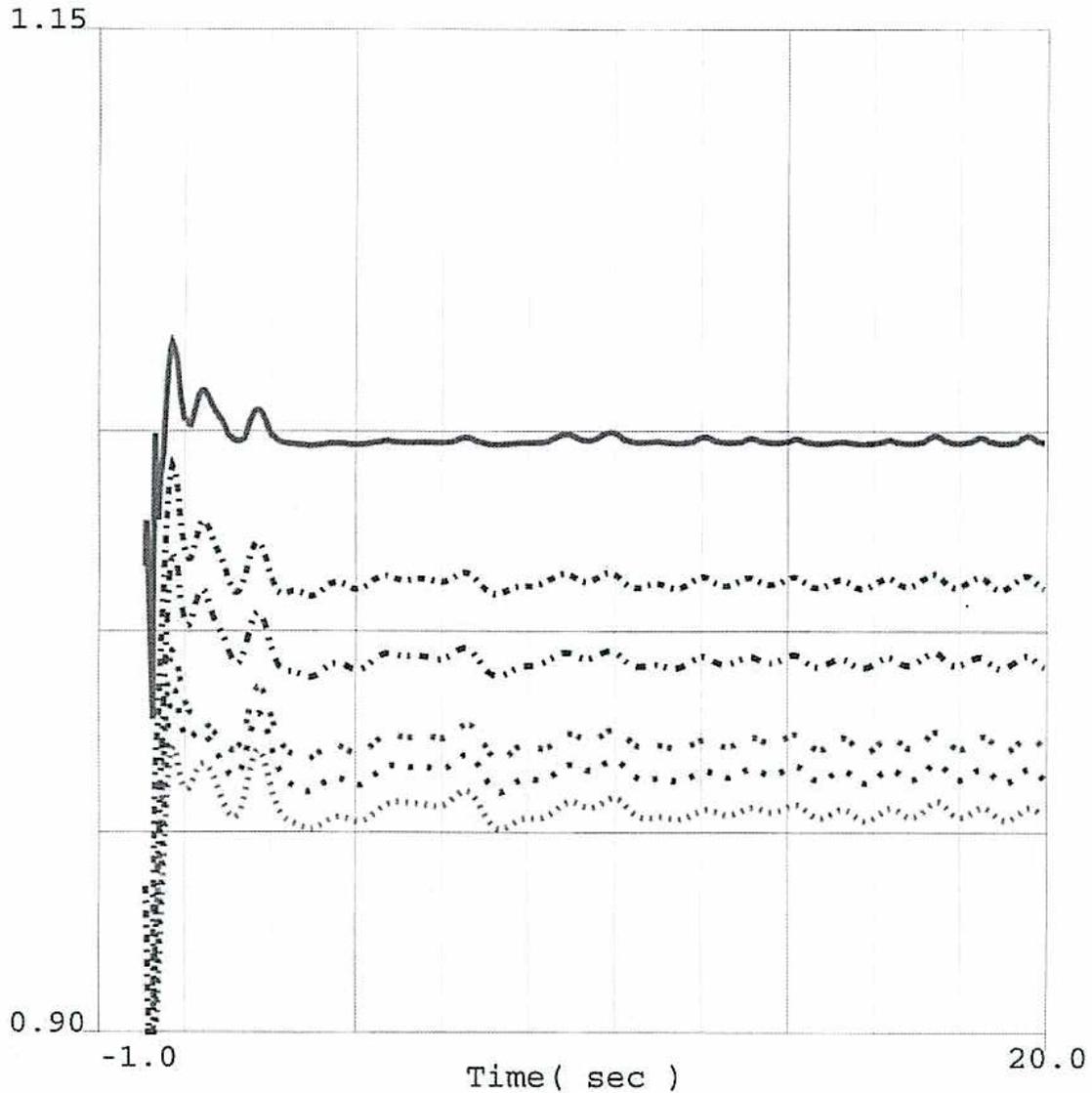


Line Style	Voltage	Bus Name	Bus ID	Location	V1	V2	V3
—	0.9	vbus	24006	ALMITOSE	230.0	1	1.15
....	0.9	vbus	24016	BARRE	230.0	1	1.15
..	0.9	vbus	24025	CHINO	230.0	1	1.15
...	0.9	vbus	24056	ETIWANDA	230.0	1	1.15
---	0.9	vbus	24074	LA FRESA	230.0	1	1.15
---	0.9	vbus	24137	SERRANO	230.0	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 230 Part 2

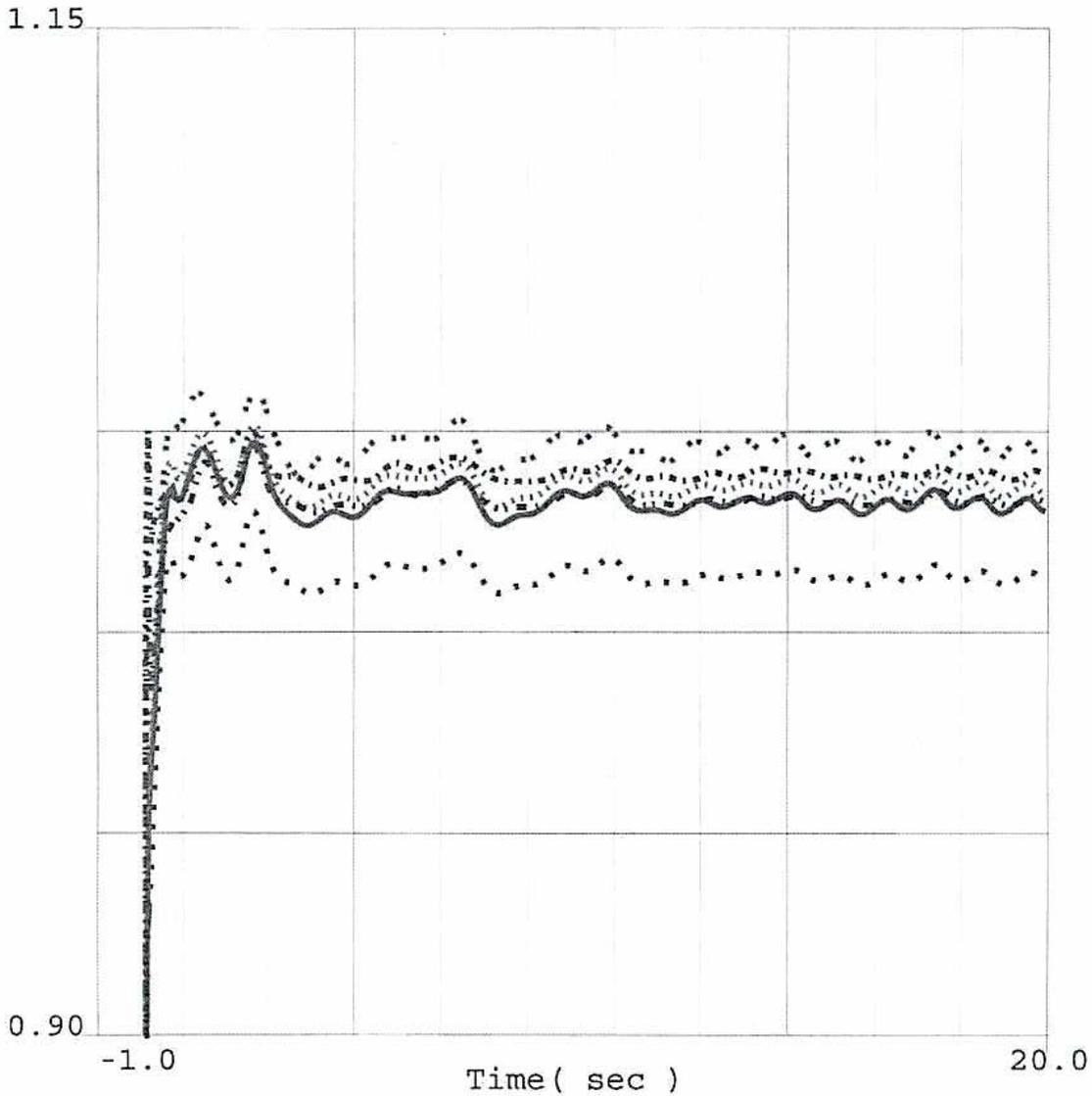


Line Style	Bus ID	Bus Name	Value 1	Value 2	Value 3	Value 4
—	0.9 vbus 24235	RECTOR	230.0	1	1	1.15
...	0.9 vbus 25201	LEWIS	230.0	1	1	1.15
..	0.9 vbus 24044	ELLIS	230.0	1	1	1.15
...	0.9 vbus 24134	SANTIAGO	230.0	1	1	1.15
...	0.9 vbus 24087	MAGUNDEN	230.0	1	1	1.15
...	0.9 vbus 24403	BAILEY	230.0	1	1	1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
 [SYLMAR 1100] [VIC-LUGO 370] [EL-LUGO 894] [MHV-LUGO 889] [DV IMPORT 3700]MW



BUS_VOLT_MAG FOR SCE 500



Line	Bus	ID	Name	V	1	2	3
—	0.9	vbus	24086	LUGO	500.0	1	1 1.15
....	0.9	vbus	24092	MIRALOMA	500.0	1	1 1.15
..	0.9	vbus	24138	SERRANO	500.0	1	1 1.15
..	0.9	vbus	24156	VINCENT	500.0	1	1 1.15
---	0.9	vbus	24801	DEVERS	500.0	1	1 1.15
---	0.9	vbus	24151	VALLEYSC	500.0	1	1 1.15

EME Sun Valley Project, 2008 Light Spring Case (Post Project)
 SCE [LOAD 14837 XCHGE -4881 GEN 11145] [AA 1473V 431M 1032D 409VA]MW
 [S.LUGO-1440MW] [N.LUGO 200MW] [N.SONGS 1698MW] [S.SONGS 442MW] [WOD 4790MW]
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