METCALF ENERGY CENTER
A joint development of Calpine & Bechtel

DOCKET
99-AFC-3
DATE JAN 28 2000
RECD. JAN 28 2000

January 28, 2000

Paul Richins
Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

RE: Metcalf Energy Center (99-AFC-3)

Dear Mr. Richins:

Please find enclosed the following items for docketing and distribution:

- Calpine/Bechtel's "Data Responses, Set 3C" in response to the California Energy Commission staff's Data Requests 207 through 232, dated December 3, 1999 (Set #3)
- PG&E Detailed Facilities Study—Supplemental Study Report

Sincerely,

Ken Abreu/sc

Ken Abreu
Development Manager
Metcalf Energy Center

Enclosures

13418

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Metcalf Energy Center
Data Requests and Responses (99-AFC-3)
Set 3C

(Responses to Data Requests: 3-207, 3-208, 3-209, 3-217, 3-231, 3-232)

Submitted to:

CALIFORNIA ENERGY COMMISSION

Submitted by:

Calpine/Bechtel

January 28, 2000

Metcalf Energy Center
Data Requests and Responses (99-AFC-3)
Set 3C

Technical Area: Alternatives
CEC Author: Gary Walker
MEC Author: Dick Stanley, John Carrier, and Ken Abreu

Background

Staff understands that the applicant investigated a potential alternative project site near the Monta Vista substation, and perhaps another site or sites near one or more of the five PG&E substations (Monta Vista, Jefferson, Newark, Ravenswood, and San Mateo) that could be used to supply power to the South Bay.

Data Requests

3-207. Please identify the site(s) on a map and describe it.

3-208. Please provide all information gathered regarding the feasibility of the site(s).

3-209. Please provide any environmental information gathered regarding the site(s).

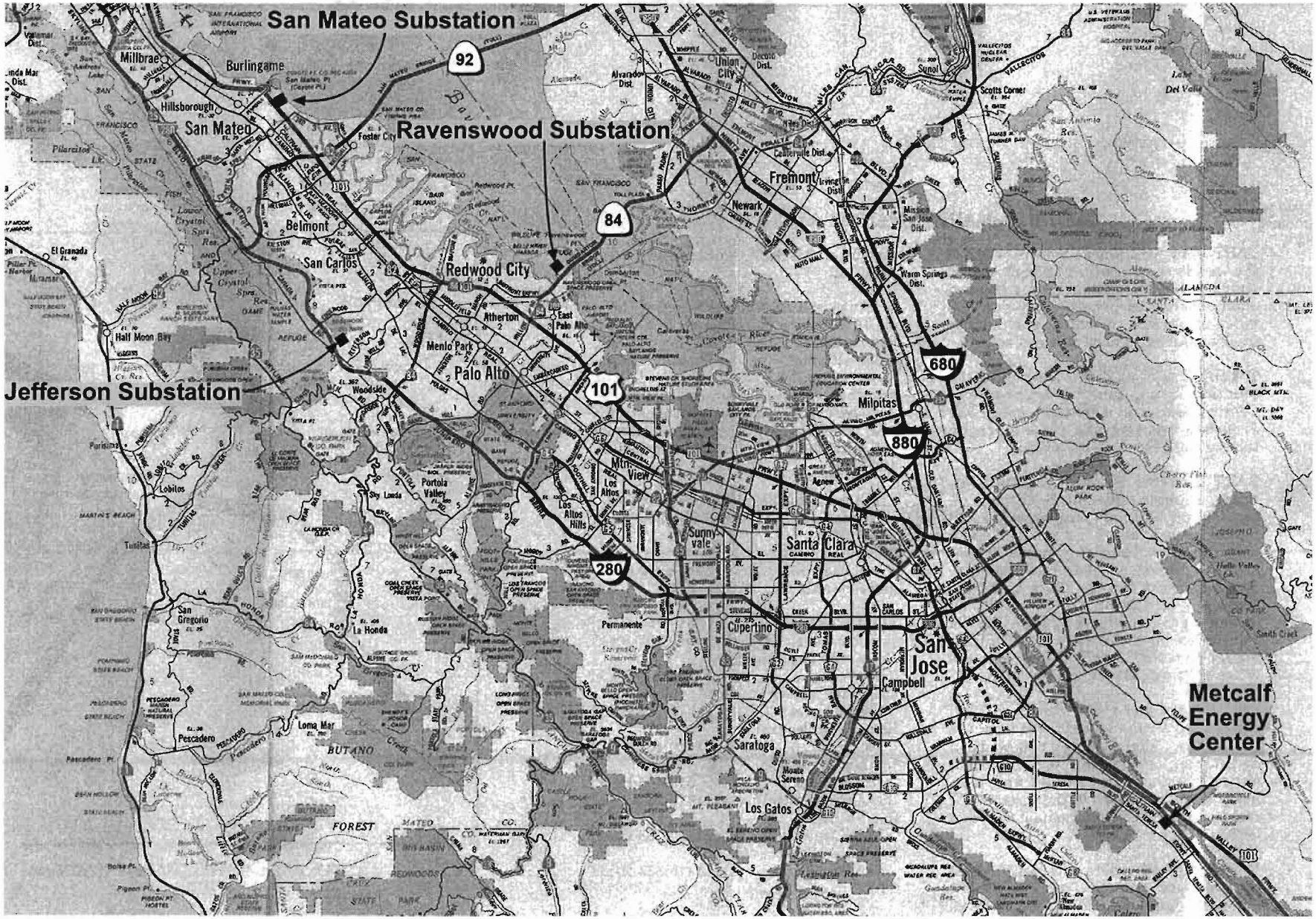
Response to 3-207, 3-208, and 3-209: Applicant's response to alternate sites near the Monta Vista and Newark substations were submitted on January 4, 1999 and January 13, 1999 as Data Responses Set 3A and 3B. The responses below address alternative sites near the Jefferson, Ravenswood and San Mateo substations.

Jefferson Substation

The Jefferson 230 kV substation is located on unincorporated land in San Mateo County just north of the Town of Woodside and west of Redwood City. It is just off Interstate 280 (I-280) at Canada Road and abuts the Edgewood County Park. To the east, directly across I-280, lie the San Francisco Peninsula Watershed and State Fish and Game Refuge. In general, protected public lands surround the substation with residential property encroaching within 1000 feet of the substation boundary (see Figure AL-3-207). Apart from the unavailability of suitably zoned land, the nearby terrain is very hilly and there is no reasonably flat parcel of land of sufficient area necessary for construction and operation of a 600 MW power generation facility.

In addition to land availability and zoning issues, there are other potential fatal flaws with the Jefferson substation site. For example, the capacity of the Jefferson substation is insufficient to support a new load source in the range of 600 MW without substantial upgrades. Also, this site is well inland and uphill from any suitable recycled water source for makeup water and a water supply line would need to cross several miles of heavily congested residential and commercial corridors to reach the site. Geologically, this site is very unattractive as the San Andreas Fault lies just across I-280 to the west. Since the natural gas supply for the Jefferson site would be from the same

150038.TM.PM SiteMap.FH8 1/27/00(naj)



SCALE

0 5 10 Miles

0 8 16 KM

N

Source: AAA map

Figure AL 3-207
General Location of PG&E Substations
Metcalf Energy Center

CH2MHILL

PG&E gas lines as considered for the Monta Vista site discussed in Data Response Set 3A, similar upgrades as discussed in the Monta Vista write-up would need to be made for the gas supply to Jefferson.

Ravenswood Substation

The Ravenswood 230 kV substation is located at the west end of the Dumbarton bridge amidst existing San Francisco Bay wetlands within the city limits of Menlo Park and adjacent to the city limits of East Palo Alto. Beyond the wetlands and open space preserves, which surround the substation, the land is generally flat and occupied with a mix of industrial, commercial and residential properties (see Figure AL 3-207).

In addition to land availability issues, there are other potential fatal flaws with the Ravenswood substation site. Much like the Jefferson site discussed above, the capacity of the Ravenswood substation is insufficient to support a new load source in the range of 600 MW without substantial upgrades. In addition, the vast expanses of protected wetlands adjacent to the site (which, in all likelihood, contain listed species) would require plant location closer to the communities of Menlo Park or East Palo Alto. The flatness of the terrain in this area would create greater potential for visual impacts.

San Mateo Substation

The San Mateo 230 kV substation is located within the city limits of San Mateo just east of Highway 101 and south of the San Mateo Municipal Golf Course. The substation is generally surrounded by shoreline and bayfront recreation areas, parks and residences. There is no available land of virtually any size for any development in the vicinity of this substation and certainly no land of the size required for a MEC-sized plant. The area is generally flat and, apart from the public and protected lands, is highly residential and light commercial (see Figure AL 3-207). Clearly visible commercial airplane traffic suggests this site is close to the flight path of San Francisco International Airport approximately 2 miles to the north.

The unavailability of any suitably sized plot of land in the vicinity of the San Mateo substation is the key fatal flaw and makes any other consideration irrelevant.

Summary

The "Staff Approach for Alternative Site Analysis" presented at the December 16, 1999 workshop, identified the following factors considered by CEC staff in selecting alternative sites for further evaluation:

Site meets most of the basic objectives of the project

Site avoids or substantially reduces one or more of the potential significant effects of the project

Site satisfies the staff's feasibility screening criteria

None of the substation sites discussed in this data response passed the CEC staff's selection criteria and were not mentioned as being suitable for further consideration in the December 16th workshop.

The Applicant's own, independent investigations of these sites bolster the CEC staff's findings. As noted above, there are numerous potential fatal flaws to siting a MEC-sized facility at any one of the above-mentioned substations. Siting a 600 MW generating facility at any of these sites would not entail lesser environmental impacts than would the proposed site. Therefore, none of these sites is considered to be a credible alternative to the Applicant's proposed project near the Metcalf substation.

Metcalf Energy Center
Data Requests and Responses (99-AFC-3)
Set 3C

Technical Area: Biological Resources
Author: Linda Spiegel
MEC Author: Debra Crowe and John Carrier

Background

The Santa Clara Valley Water District (SCVWD) has a number of concerns including planting in the Fisher Creek riparian corridor.

Data Requests

3-217. Please provide responses to the nine questions raised by the SCVWD in their letter that was discussed at the recent Biological Resources workshop.

Response: Attachment BR 3-217 provides a response to the issues raised by the SCVWD.

Response to Santa Clara Valley Water District October 22, 1999 Letter

1. A hydraulic analysis should be completed that defines the extent, depth, and pattern of flooding over the site. This analysis will define the floodplain on the parcel and the base flood elevations. The structures on the site should be elevated a minimum of 2 feet above the 100-year flood elevations, or the levee(s) rebuilt to meet the FEMA flood protection requirements.

   Response: Analysis of the existing flooding potential at the MEC site was based on the currently effective August 2, 1982 FEMA Flood Insurance Rate Map. The map indicates the MEC site would not be within the 100-year flood zone. Based on meetings we had with the District, we understand that since the publication of the map in 1982, FEMA changed its certification policy for levees. As a result of the change in FEMA's levee policy, the levees along Fisher Creek are no longer certified as providing protection from the 100-year flood. Therefore, the MEC could not rely on the integrity of the existing levees for protection from the 100-year flood.

   We understand that the District would like Calpine/Bechtel to perform an analysis that defines the extent, depth, and pattern of flooding over the MEC site while assuming the levees along Fisher Creek have failed. After this analysis is complete, the District suggested that Calpine/Bechtel explore alternatives to remove the MEC site from the 100-year flood hazard area. It should be noted that Calpine/Bechtel has already determined that, regardless of the level of the 100-year flood, proper drainage of the MEC site will require raising the nominal elevation of the site to approximately 5 feet above the level of the top of the existing levee. The issue of the integrity of the existing levees is therefore moot.

   A similar flood hazard analysis is currently being performed by Schaaf & Wheeler along the upper portions of Fisher Creek for the purposes of assessing the flooding potential at the proposed Coyote Valley Research Park (CVRP) site. The District and Calpine/Bechtel believe that coordination between Calpine/Bechtel and CVRP is critical to ensuring compatible hydrologic and hydraulic models are developed for the entire reach of Fisher Creek affected by the CVRP and Calpine/Bechtel projects. To this end, Calpine/Bechtel is contracting with Schaaf & Wheeler to perform the modeling to establish the baseline conditions for the entire reach of Fisher Creek.

   Once the baseline conditions are established and the flooding potential has been quantified, alternative flood control measures such as detention basins, levees, or a modified floodplain, will be evaluated and incorporated into the design of the MEC.

2. The District is interested in acquiring right of way for the existing Fisher Creek channel levee(s), and any additional right of way needed to accommodate maintenance access or the construction of a levee system that is necessary to protect the site from flooding.

   Response: As we understand it, the easement that once belonged to the Laguna Seca Reclamation District was surrendered to the District upon abandonment by the Laguna Seca Reclamation District. Calpine/Bechtel is currently investigating ownership of the prior easement. Calpine/Bechtel will consider dedication of a right-of-way to the District to provide access for maintenance and levee construction as part of

the overall discussion of the District's permit requirements as described in Question 10 below.

3. The increased runoff (Section 8. 14.3.2) from the site will need to be mitigated. The estimate that has been provided in the report should be supplemented with an HEC-1 hydrology analysis to verify the estimated peak runoff, volume, and time of concentration due to the site improvements. The detention pond should be sized and operated to accommodate the increased runoff such that induced flooding on Coyote Creek does not occur. The size of the detention pond will be determined by the HEC-1 analysis. The inflow, outflow, and resulting pond storage volume and elevation data will need to be submitted for review. The District is not responsible for the maintenance or operation of singular on site detention facilities. It may be possible to join with the developer of the Coyote Valley Research Park (Gibson-Speno, LLC) upstream from the Calpine site and utilize a regional approach to mitigating the increased runoff.

   Response: The increased runoff from the proposed MEC plant would be mitigated with an on-site detention facility. The suggestion that Calpine use a mutual detention facility with the Coyote Valley Research Park, was considered, but found to be infeasible because of the difference in elevation between the two sites. The proposed MEC detention pond is sized based on a 24-hour, 25-year, storm event. Once the modeling described in our response to Question 1 above is completed, the size of the detention pond will be reassessed.

4. The report identifies the use of a package sewage treatment plant for domestic purposes (page 8.14-13). Additional information on the handling of the solids should be provided The solids containment and storage system must not allow any leachate, seepage or drainage to enter the Coyote groundwater subbasin or to be discharged to Fisher Creek because of the potential for bacteria) and nitrate contamination of ground or surface waters. The treated wastewater return line to the sanitary sewer system is acceptable. It is the District's understanding that the Regional Water Quality Control Board has not allowed package sewage treatment plants of this type in the past.

   Response: The package sewage treatment plant proposed in the AFC was withdrawn in Supplement A. We plan to connect directly to the sanitary sewer located in Santa Teresa Boulevard.

5. Table 8.14-19 will need to be corrected. The appropriate District contact for well construction destruction, or modification is Mr. Michael Duffy. Mr. Tom Iwamura is no longer with the District and should be removed from the contact list. Sue Tippets is the contact for District permits for proposed work within 50 feet of a District facility. Please remove other identified District individuals from the contact list since they are not involved with permitting.

   Response: MEC appreciates the assistance of SCVWD in identifying the appropriate contacts. The CEC may also use this information in contacting the correct representatives, if further information is required.

6. The report states that the well completion report must be filed with the state. In Santa Clara County, well completion reports are filed with the District, which then transmits them to the state.

   Response: We appreciate your assistance in identifying necessary permit filing procedures.

7. The report states that the exhaust gas emitted to the atmosphere will contain no more than 2.5 ppmvd at 15 percent oxygen. There will also be untreated ammonia in the exhaust gas at concentrations up to 10 ppmvd at 15 percent oxygen. The nitrate impact analysis concludes that these emissions will result in 45 percent increase in the total nitrogen deposition in the area of the project site. The amount of nitrate as nitrogen that will be available to plants and the impacts on plant species of the additional increase has been estimated. However, the potential nitrate as nitrogen impacts on nitrate mass loading to local groundwater and surface water quality should also be analyzed, due to existing high nitrate levels in local groundwater.

   Response: MEC is preparing a quantitative analysis of potential nitrate effects on surface and groundwater quality in the vicinity of the project. The analysis is expected to be completed in February 2000. The report will be filed as a response to Data Request #238, and a copy will be furnished to SCVWD to review at that time.

8. The report discussed the potential public health impacts associated with a release of hazardous materials. However, the report does not include sufficient discussion on the potential environmental effects of a release of hazardous materials. Specifically, the report should include an analysis of the effects of a major release of ammonia on water quality and the nonhuman receptors.

   Response: The public health effects of an ammonia spill were addressed in response to Data Request #48a, filed with the CEC on September 17, 1999 (Data Responses, Set 1D). It is not necessary to address the effects of a major ammonia release on water quality since the ammonia tank will be placed inside a secondary containment system that is capable of containing the entire contents of the ammonia tank. Therefore, in the event of a catastrophic failure of the ammonia tank, it is estimated that the ambient air concentration of ammonia at Fisher Creek would not exceed 14 ppm. Since ammonia is lighter than air, ammonia vapor from a release would tend to rise and disperse, thereby further reducing the potential of ammonia deposition on Fischer Creek.

9. The District agrees with the proposal to utilize reclaimed water for the cooling process. Should the need arise, an alternative source of water for the cooling was identified as groundwater from the existing well field at Bailey Avenue and Santa Teresa Boulevard or the installation of new wells on the parcel. An alternative source of cooling water not identified may be raw water from the District's Cross-Valley Pipeline, which is located near the intersection of San Bruno Avenue and Santa Teresa Boulevard south of the site. Use of this source of water would require construction of a pipeline to transport the water to the site. The need for filtration and treatment of the raw water may be necessary prior to use in the cooling process on the Metcalf Energy Center site. The District is in the process of revising its water supply policies, which may affect delivery of this source.

   Response: Calpine/Bechtel appreciates the assistance of SCVWD in identifying alternative water supplies and the procedures for attaining them. We are evaluating the various options for a backup water supply and appreciate the support of the District.

10. A District permit is required for all activities that occur within 50 feet of a creek's top of bank, District fee title or easement right of way, or a water transmission pipeline. These activities include, but are not limited to, building within the floodplain, grading, fencing, irrigation, planting, construction of structures, and encroaching onto District right of way.

ATTACHMENT BR 3-217

Response: MEC appreciates the assistance of SCVWD in identifying the need for a District permit for activities in the floodplain and in the District right-of-way. We recommend the District apprise the CEC staff of its permit requirements so those requirements may be properly addressed through the CEC's siting process.

Metcalf Energy Center
Data Requests and Responses (99-AFC-3)
Set 3C

Technical Area: Land Use
Author: Eric Knight
MEC Author: John Carrier, Jerry Salamy

Background

Alternative water line segment B-3, which would contain a portion of the water supply, domestic water supply and industrial wastewater pipelines, would traverse agricultural land that lies south-southwest of the MEC site. According to AFC Supplement A, this land is currently planted in safflower, orchard trees, wheat, and row crop. If all three pipelines were included in segment B-3, a 66-foot wide construction corridor would be required. The supplement states that pipeline construction on agricultural land traversed by segment B-3 will temporarily impact the crops grown there. The supplement further states that direct loss of orchard trees will be avoided by strategically routing the pipeline corridor between trees or through more open areas (AFC Supplement page 3-3).

Data Request

3-231. Please describe how Calpine/Bechtel will minimize impacts to agricultural activities on land traversed by segment B-3.

Response: Alternative water line Segment B-3 will be routed through agricultural land in a manner to minimize, to the greatest extent feasible, impacts to agricultural land and crops. The owners of agricultural land impacted by the water line construction will be compensated for the easement and loss of crop production. The level of compensation will be determined during the commercial negotiations for easement rights with the individual landowners. Portions of those water pipelines that will be owned by public utilities will be subject to the usual comdemnation procedures.

3-232. Biological Resources subsection 3.2.3 of Supplement A states that a biological monitor will conduct pre-construction surveys within agricultural fields and orchards and identify potential trenching impacts to trees and modify the alignment of segment B-3 to avoid direct impacts. The supplement further states that if construction of segment B-3 indirectly causes a tree to die, Calpine/Bechtel will plant replacement trees in locations approved by the City of San Jose arborist. This discussion appears to apply only to non-agricultural trees and not orchard trees. Please explain how agricultural landowners would be compensated for the lost value in crop production if construction of segment B-3 indirectly causes an orchard tree to die. In your response also address, tree replacement ratios, and the size and location of the replacement trees.

Response: The owners of agricultural land impacted directly or indirectly by the water line construction will be compensated for the easement and loss of crop production. The level of compensation will be determined during the commercial negotiations for easement rights with the individual landowners.

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:	)	Docket No. 99-AFC-3
	)	
Application for Certification for the Metcalf Energy Center [Calpine Corporation and Bechtel Enterprises, Inc.]	)	PROOF OF SERVICE (REVISED 01/04/2000)

I, Nancy Michaelis-Rambin, declare that on January 28, 2000, I deposited in the United States mail, copies of the attached documents:

Metcalf Energy Center (99-AFC-3):

- Calpine/Bechtel's "Data Responses, Set 3C" in response to the California Energy Commission staff's Data Requests 207 through 232, dated December 3, 1999 (Set #3)
- PG & E Detailed Facilities Study—Supplemental Study Report

in Sacramento, CA with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

Sent original and 12 copies to the following address:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 99-SIT-3
DOCKET UNIT, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

In addition to the documents sent to the Commission Docket Unit, also sent individual copies of all documents to:

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Sacramento, CA 95812

I declare that under penalty of perjury that the foregoing is true and correct.

Nancy Michaelis-Rambin

METCALF ENERGY CENTER
A joint development of Calpine & Bechtel

January 19, 2000

Mr. Jeffrey C. Miller
Regional Transmission Manager
California Independent System Operator
151 Blue Ravine Road
Folsom, California 95630

Subject: **Calpine/Bechtel Metcalf Energy Center**
PG&E Detailed Facilities Study – Supplemental Study Report

Reference: Cal-ISO letter dated September 2, 1999 to Kenneth E. Abreu, File No. GP99-037

Dear Jeff:

The attached DFS Supplemental Studies Report is submitted herewith in response to Cal-ISO's request (Reference). This report confirms that operation of MEC will not result in transmission system impacts due to "level C" contingencies. The report also shows that the system remains stable under all conditions with the addition of MEC. The report also confirms that even in the "Off-Peak South Bay Stress Scenario," which represents a disproportionate and hypothetical dispatch scenario, that only slight overloads could result, all of which could be remedied with minor congestion management, should certain contingencies occur.

It should be noted that there are two overloads pointed out in the report that will probably be solved with PG&E projects that have been identified since the base cases were developed. The overload on the Vineyard-Vallecitos circuit should be remedied with PG&E's current plans for the Tri-Valley Project. This project was not modeled in the base case. Also not modeled is the potential re-rating of the Monta Vista 230/115kV transformers to higher normal and emergency ratings, another project identified by PG&E since the development of the MEC base cases. This re-rating should remedy the Monta Vista 230/115kV transformer overloads.

Cal-ISO is requested to review these assumptions and advise us if PG&E should be requested to make any changes in its assumptions for this analysis. However, we do not believe that the results of this report warrants any delays in rendering a preliminary

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determination for the project and we would appreciate Cal-ISO providing its preliminary determination by January 28, 2000.

In summary, we believe that any overloads that would result from operation of MEC at its rated generating capacity, even under the most adverse system operating conditions will not cause or contribute significantly to any overloads that should require the construction of new facilities. And we believe that any minor overloads that might result from contingency conditions and the operation of MEC at its rated generating capacity could be mitigated by minor congestion management actions.

We would appreciate an early opportunity to discuss this report with you and your staff. If you have any questions or comments on this submittal, please do not hesitate to contact the undersigned at (925) 600-2022, or Jim Dunstan at (925) 600-2024.

Sincerely,

CALPINE/BECHTEL

Ken Abreu

Kenneth Abreu, P.E.
Project Development Manager, MEC

Attachment: as noted

cc: R. Peter Mackin, P.E., Cal-ISO, w/att.

SUPPLEMENTAL STUDIES

METCALF ENERGY CENTER
GENERATION INTERCONNECTION

Pacific Gas and Electric Company

December 30, 1999

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a. *Summer Off-Peak with MEC in-service following Level C contingencies*
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ATTACHMENT 4 - REVISED POWER FLOW PLOTS FROM ATTACHMENT 4 OF THE METCALF ENERGY CENTER DETAILED FACILITIES STUDY (DFS).

a. *MEC (600 MW) Off-Line: Summer 2002 Peak*
b. *MEC (600 MW) On-Line: Summer 2002 Peak*
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d. *MEC (600 MW) On-Line: Summer 2002 Off-Peak*

ATTACHMENT 5 - ADDITIONAL STABILITY PLOTS FOR ATTACHMENT #5 OF DFS

a. *Load Rejection (i.e loss of 600 MW of MEC's generation) - Loss of the Metcalf-MEC 230 kV circuit and MEC-Monta Vista 230 kV Circuit*
b. *Loss of Metcalf-Monta Vista #3-230 kV Circuit*
c. *Loss of Metcalf Energy Center-Monta Vista 230 kV Circuit*
d. *Loss of Metcalf Energy Center-Metcalf 230 kV Circuit*
e. *Loss of Newark-San Mateo 230 kV Circuit*
f. *Loss of Tesla-Newark 230 kV Circuit*
g. *Loss of Metcalf 500/230 kV Transformer Bank No.11*

ATTACHMENT 6 - TRANSIENT STABILITY PLOTS FOR OUTAGE # 5 OF DFS.

a. *Loss of the Newark - San Mateo 230 kV Circuit with MEC (600 MW) in-service*
b. *Loss of the Newark - San Mateo 230 kV Circuit without MEC (600 MW) in-service*

ATTACHMENT 7 - STABILITY PLOTS FOR CAISO LEVEL C DISTURBANCES:

a. *Loss of the Metcalf - Tesla 500 kV circuit due to a fault*
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c. *Loss of the Metcalf 500/230 kV transformer bank #12 due to a fault*
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e. *Loss of the Monta Vista 230 kV Bus #2 due to a fault*
f. *Loss of the Newark Bus Section D with a circuit breaker (CB 200) failure due to a fault*

Introduction

A Detailed Facilities Study Report (DFS) was issued to Calpine and Becthel (C&BE) on June 9, 1999 for the Metcalf Energy Center (MEC) generation facility. Upon completion of the report and reviewed by the California Independent System Operator (CAISO), CAISO requested several supplemental studies to be provided before the CAISO can approve the project. A letter from CAISO to C&BE dated on September 2, 1999 outlined the required supplemental studies. C&BE requested PG&E to conduct these supplemental studies.

The purpose of these additional supplemental studies is to provide CAISO the analysis on the off-peak case where the generation levels at Moss Landing are 1480 MW and the generation at Pittsburg/Contra Costa power plants are 1340 MW. This sensitivity study should provide a stressed South Bay transmission system that should be sufficient to determine any impacts to the ISO controlled grid that may result from the addition of the MEC. Additional power flow studies were also required for the Peak and Off-Peak basecases from the DFS.

Study Scope of Supplemental Studies

The Detailed Facilities Study (DFS) Supplemental Studies Scope includes:

- Modifying the Power Flow Plots for DFS Attachment 4 - PG&E to modify the power flow drawings used in Attachment 4 of the MEC DFS. The modifications in the plots are to include all the 230 kV circuits that are connected to the Metcalf 230 kV bus. *(Modified plots can be reviewed in Attachment 4 of this report.)*

- Produce Additional Transient Stability Plots for DFS Attachment 5 - PG&E to create one additional stability plot per each stability simulation to show all the line flows (in MW) for the lines/transformers that are being switched out and the lines/transformers that are in parallel. *(Additional stability plots can be reviewed in Attachment 5 of this report.)*

- Re-run Stability Simulation Outage #5 - PG&E to rerun stability outage #5 of the DFS. The simulation will run to 20 seconds and plot the bus voltage, frequency, 115 kV tie-lie flow, generator outputs (field voltage, relative rotor angle, speed, Pgen, Qgen) for the Humboldt area. PG&E to simulate outage 5 before and after the MEC project to provide comparison analysis. *(Stability plots can be reviewed in Attachment 6 of this report.)*

- Create CAISO Level C Contingencies (C1-Bus section outages & C2-Breaker Failures) for Power Flow studies.

- Run CAISO Level C Contingencies on the Following Basecases:
    1. Year 2002 Heavy Summer Peak.
    2. Year 2002 Off-Summer Peak.
    3. Year 2002 South Bay Stress.

- Run CAISO Level B Contingencies using the Year 2002 South Bay Stress Basecase and tabulate all Normal and Emergency Overloads caused solely by the addition of the MEC (600 MW). The Level B Contingency list used in the Detailed Facilities Study will be used for the supplemental studies.

- Run additional Stability Simulations for the following disturbances:
    a) Loss of the Metcalf - Tesla 500 kV circuit due to a 3-phase fault.
    b) Loss of the Metcalf-Moss Landing 500 kV circuit due to a 3-phase fault.
    c) Loss of the Metcalf 500/230 kV transformer bank #12 due to a 3-phase fault.
    d) Loss of the Moss Landing-Green Valley Double Circuit Tower Lines due to a 3-phase fault.
    e) Loss of the Monta Vista 230 kV Bus #2 due to a 3-phase fault.
    f) Loss of the Newark Bus Section D with a circuit breaker (CB 200) failure due to a 3-Phase fault.

Power Flow Study Basecase Assumptions

Power Flow and generation sensitivity analysis were conducted using the following Basecases:

- PG&E's Year 2002 Heavy Summer Peak Basecase.
- PG&E's Year 2002 Summer Off-Peak Basecase.
- PG&E's Year 2002 South Bay Stress Basecase.

The Heavy Summer Peak and Summer Off-Peak Basecases were the same cases used for the Detailed Facilities Study for MEC.

Year 2002 South Bay Stress Basecase

The 2002 South Bay Stress Basecase was created from the 2002 Summer Off-Peak Basecase. The major differences between the Summer Off-Peak and the South Bay Stress cases are the generation levels between Moss Landing (6&7) and Pittsburg (1-7) / Contra Costa (6&7). For the Summer Off-Peak Basecase, Pittsburg (1-7) / Contra Costa (6&7) power plants were modeled near its maximum plant output (2320 MW) while Moss Landing was at 33 % of its maximum plant output (500 MW). The South Bay Stress Basecase models these generation levels reversed from the Summer Off-Peak Basecase, with Moss Landing generation at maximum plant output (1480 MW), while Pittsburg (1-7) / Contra Costa (6&7) generation output reduced by an amount equal to the increase at Moss Landing. Therefore, the Pittsburg / Contra Costa plants total generation output was decreased to 1340 MW for the South Bay Stress Basecase. These generation levels and assumptions can be reviewed in Table 1 below.

	Year 2002 Peak	Year 2002 Off-Peak	Year 2002 Off-Peak South Bay Stress
California - Oregon 500 kV	4,800 MW	3,000 MW	3,000 MW
California - Oregon 115 kV	80 MW	0 MW	0 MW
Midway - Vincent (South Tie)	Swing Bus	Swing Bus	Swing Bus
Total Bay Area Load	8,740 MW	6,495 MW	6,495 MW
Total Bay Area Generation	4,680 MW	3,416 MW	3,416 MW
Generation Units	**Gen Output**	**Gen Output**	**Gen Output**
Delta Energy Center (DEC)	0 MW	0 MW	0 MW
Pittsburg 1 through 7	2,050 MW	1,920 MW	1,240 MW
Contra Costa 6 & 7	690 MW	400 MW	100 MW
Moss Landing 6 & 7	1,480 MW	500 MW	1,480 MW
Potrero Unit 3	205 MW	100 MW	100 MW
Hunters Point (2, 3 & 4)	385 MW	90 MW	90 MW

Table 1: Key Assumptions For Peak, Off Peak, and Off-Peak South Bay Stress Basecases

Power Flow Studies

Supplemental power flow studies were conducted with and without MEC's 600 MW of generation connected to the Metcalf-Monta Vista No.4-230 kV circuit for 2002 Summer Peak, 2002 Summer Off-Peak, and 2002 South Bay Stress Basecases. The study was performed using a contingency list created for the De Anza, Central Coast, Mission and San Jose PG&E areas. This contingency list included CAISO level C1 (Bus section outages) and level C2 (Bus Section outages with a breaker failure) outages. There were a total of 82 power flow outages in the Level C contingency list. Table 2 below provides a summary of the outages in the contingency list per PG&E Area and categorizes the outages by CAISO level. The Level C contingency list can be reviewed in Attachment 1.

CAISO Level	Mission	De Anza	San Jose	Central Coast	Total Outages per CAISO Level
C1(Bus section Outages)	14	8	19	11	52
C2 (Bus Section outages with Breaker Failure)	15	2	6	7	30
Total Outages Studied per PG&E Area	29	10	25	18	82

Table 2: Level C Contingencies Studied per PG&E Area

In addition to the Level C contingencies, the Level B (single element outages) contingencies were also studied for the Year 2002 South Bay Stress Basecase. The Level B list consisted of 246 outages and can be reviewed in Attachment 2.

General Criteria for Selecting Overloads

Normal Overloads

Normal overloads occur on existing facilities when the loading exceeds 100 % of their summer normal interior ratings (Mission Division) or summer normal coastal ratings (De Anza, San Jose, Central Coast Divisions) due to the addition of the MEC's output to the PG&E owned, CAISO controlled transmission grid.

Emergency Overloads

Emergency Overloads occur on existing facilities when the loading exceeds 100 % of their summer emergency interior ratings (Mission Division) or summer emergency coastal ratings (De Anza, San Jose, Central Coast Divisions) due to the addition of the MEC's output to the PG&E owned, CAISO controlled transmission grid. Single element (Level B) and Multiple element (Level C) contingencies were simulated with both the MEC in-service and out-of-service.

Power Flow Study Results

Summer Off-peak

The study analysis results show that the addition of 600 MW of new generation at the MEC in the Year 2002 Heavy Summer Off-Peak Basecase resulted in **no overloaded** facility under normal operating conditions and no emergency overloads following Level C contingencies. The results are shown in Attachment 3.

Summer Peak

The study analysis results show that the addition of 600 MW of new generation at the MEC in the Year 2002 Heavy Summer Peak Basecase resulted in **no overloaded** facilities under both normal operating conditions and following Level C (Bus section outages and Bus section outages with a Breaker Failure) contingencies. The results are shown in Attachment 3.

Summer Off-Peak South Bay Stress Scenario

The study analysis results show that the addition of 600 MW of new generation at the MEC in the Year 2002 South Bay Stress Basecase resulted in **4 emergency overloaded** facilities following Level B (Single Contingencies) or Level C (Bus section outages or Bus section outages with a Breaker Failure) contingencies. There were **no normal overloaded** facilities caused solely to the addition of 600 MW of new generation at the MEC in the Year 2002 South Bay Stress Basecase. The results for the South Bay Stress Scenario are shown in Table 3.

Emergency Overloads

Summer 2002 Off-Peak South Bay Stress Scenario							
Metcalf Energy Center (600 MW)							
#	Circuits & Transformers	Voltage (kV)	Emergency Ratings (Amps or MVA)	Basecase Loading without MEC (%)	Equipment Loading with MEC (Amps or MVA)	Emergency Equipment Overload with MEC (%)	Worst Contingencies
1	Monta Vista Transformer Bank	230/115	144 MVA	*96 %*	152 MVA	*106 %*	16C
2	Ravenswood-Ames #1 Circuit	115	522 Amps	*91 %*	536 Amps	*103 %*	93B
3	Ravenswood-Ames #2 Circuit	115	522 Amps	*91 %*	536 Amps	*103 %*	93B
4	Vineyard-Vallecitos Circuit (between luka and Vallectos stations)	60	326 Amps	*82 %*	342 Amps	*105 %*	141B & 2C

Table 3: Summer Off-Peak South Bay Stress Scenario Emergency Overloads with MEC (600 MW)

"Worst Contingencies" Column Reference for Table 3:

- 93B - San Mateo - Newark D 230 kV Circuit Outage in the Level B List, Attachment 2
- 141B - San Ramon 230/60 kV Transformer Bank Outage in the Level B List, Attachment 2
- 2C - Bus section outage of the San Ramon 230 kV Bus in the Level C List, Attachment 1
- 16C - Bus section outage of the Monta Vista 230 kV Bus #2, Attachment 1

Stability Studies

Stability studies were performed to ensure the transmission system would remain in operating equilibrium through normal and abnormal operating conditions with the MEC in service.

Simulated Disturbances

The simulations studied for the MEC Supplemental Studies were:

a) Loss of the Metcalf-Tesla 500 kV Circuit (Level B disturbance).
b) Loss of the Metcalf-Moss Landing 500 kV Circuit (Level B disturbance).
c) Loss of the Metcalf 500/230 kV Transformer Bank #12 (Level B disturbance).
d) Loss of the Double Circuit Tower Lines Moss Landing-Green Valley #1 & #2 115 kV Circuits (Level C disturbance).
e) Loss of the Monta Vista 230 kV Bus Section #2 (Level C disturbance).
f) Loss of the Newark 230 kV Bus Section D due to a Circuit Breaker Failure (CB #200) (Level D disturbance).

The simulations were conducted for a period of 10 seconds to verify system stability. For each outage, three phase faults were simulated at Metcalf 500 kV, Monta Vista 230 kV, Newark 230 kV, or Moss Landing 115 kV stations. The total clearing times for faults on 500 kV stations were at 4 cycles, while faults on 230 kV or 115 kV stations were at 6 cycles. For the Newark 230 kV Bus section outage, (Breaker Failure) the clearing time for the station was 13 cycles due to the breaker failure. The stability plots for these simulations can be reviewed in Attachment 7 of this report.

Re-run Stability Simulation Outage #5 of DFS

The simulation on Outage #5 (Loss of Newark-San Mateo 230 kV line) of the DFS was re-run for a period of 20 seconds (instead of 10 seconds). The following were plotted for the Humboldt area:

1. Bus Voltage
2. Bus Frequency
3. 115 kV tie-line flow
4. Generator Outputs:
    a. Field Voltage
    b. Relative Rotor Angle
    c. Speed
    d. Pgen
    e. Qgen

The simulation was run with the MEC (600 MW) project on line and with the MEC project off-line to provide a comparison analysis. The stability plots for these simulations can be reviewed in Attachment 6 of this report.

Stability Study Results

For all of the above simulations, oscillations damped out within the study period indicating the transmission network remained stable with the addition of the MEC facility connected to the Metcalf-Monta Vista No.4-230 kV circuit.

Attachment 1:
Level C Contingency List

ATTACHMENT 1: Level C Contingency List

```
# PG&E 1999 BASECASE SERIES, 2002 SUMMER CASE
# BUS FAULTS CONTINGENCY FILE
#            FOR
# METCALF ADDITIONAL STUDIES
#
# By: P. MARK ESGUERRA
#     PG&E
#     ETPO - Transmission Area Planning
#
# *********** BUS FAULT CONTINGENCIES for Area 16 - MISSION AREA ************
#
# (1) BUS FAULT  30555  "SANRAMON"
# San Ramon 230 kV Bus 1
1  30555  30526  "1"    0     # LINE from  SANRAMON 230.00  to  PITSBURG 230.00
0
#
# (2) BUS FAULT  30555  "SANRAMON"
# San Ramon 230 kV Bus 2
1  30555  30550  "1"    0     # LINE from  SANRAMON 230.00  to  MORAGA   230.00
2  30555  35209  "1"    0     # TRAN from  SANRAMON 230.00  to  SAN RAMN  60.00
0
#
# (3) BUS FAULT  30630  "NEWARK D"
# Newark 230 kV Bus 1 Sec "D"
1  30630  35709  "2"    0     # LINE from  NEWARK D 230.00  to  LS_ESTRS 230.00
1  30630  30585  "1"    0     # LINE from  NEWARK D 230.00  to  LS PSTAS 230.00
1  30630  30624  "1"    0     # LINE from  NEWARK D 230.00  to  TESLA E  230.00
1  30630  30700  "1"    0     # LINE from  NEWARK D 230.00  to  SANMATEO 230.00
2  30630  30626  "7"    0     # TRAN from  NEWARK D 230.00  to  NWRK  7M  13.20
7
20
0
#
# (4) BUS FAULT  30630  "NEWARK D"
# Newark 230 kV Bus 2 Sec "D"
1  30630  35709  "1"    0     # LINE from  NEWARK D 230.00  to  LS_ESTRS 230.00
1  30630  30631  "1"    0     # LINE from  NEWARK D 230.00  to  NEWARK E 230.0
2  30630  30627  "9"    0     # TRAN from  NEWARK D 230.00  to  NWRK  9M  13.20
7
20
0
#
#
# (5) BUS FAULT  30631  "NEWARK E"
# Newark 230 kV Bus 1 Sec "E"
1  30631  30562  "1"    0     # LINE from  NEWARK E 230.00  to  TES JCT  230.00
1  30631  30735  "1"    0     # LINE from  NEWARK E 230.00  to  METCALF  230.00
7
20
0
#
#
# (6) BUS FAULT  30631  "NEWARK E"
# Newark 230 kV Bus 2 Sec "E"
1  30631  30554  "1"    0     # LINE from  NEWARK E 230.00  to  CASTROVL 230.00
1  30631  30735  "2"    0     # LINE from  NEWARK E 230.00  to  METCALF  230.00
2  30631  30628  "11"   0     # TRAN from  NEWARK E 230.00  to  NWRK 11M  13.20
4  30631      0  "1"    0     # LOAD-DROP    NEWARK E 230.00  LOAD==157.481491(76.265991)
4  30631      0  "1"    1     # (modeling problem)
4  30631  30735  "1"    1     # - this load will be served from Metcalf
7
20
0
#
# (7) BUS FAULT  35120  "NEWARK D"
# Newark 115 kV Bus 1 Sec "D"
1  35120  35111  "1"    0     # LINE from  NEWARK D 115.00  to  JARVIS   115.00
1  35120  36852  "1"    0     # LINE from  NEWARK D 115.00  to  SCOTT    115.00
1  35120  36960  "1"    0     # LINE from  NEWARK D 115.00  to  OAKDLTID 115.00
0

# (8) BUS FAULT  35120  "NEWARK D"
# Newark 115 kV Bus 2 Sec "D"
1  35120  35107  "1"    0     # LINE from  NEWARK D 115.00  to  DUMBARTN 115.00
1  35120  35111  "2"    0     # LINE from  NEWARK D 115.00  to  JARVIS   115.00
1  35120  36960  "2"    0     # LINE from  NEWARK D 115.00  to  OAKDLTID 115.00
2  35120  35109  "1"    0     # TRAN from  NEWARK D 115.00  to  NWRK 2 M 115.00
0

# (9) BUS FAULT  35121  "NEWARK E"
```

```
# Newark 115 kV Bus 1 Sec "E"
1  35121  35110  "1"    0     # LINE from  NEWARK E 115.00  to  FREMNT   115.00
1  35121  35350  "1"    0     # LINE from  NEWARK E 115.00  to  AMES BS1 115.00
1  35121  35351  "1"    0     # LINE from  NEWARK E 115.00  to  AMES BS2 115.00
0

# (10) BUS FAULT  35121  "NEWARK E"
# Newark 115 kV Bus 2 Sec "E"
1  35121  35110  "2"    0     # LINE from  NEWARK E 115.00  to  FREMNT   115.00
1  35121  35350  "2"    0     # LINE from  NEWARK E 115.00  to  AMES BS1 115.00
1  35121  35351  "2"    0     # LINE from  NEWARK E 115.00  to  AMES BS2 115.00
0

# (11) BUS FAULT  35122  "NEWARK F"
# Newark 115 kV Bus 1 Sec "F"
1  35122  35357  "1"    0     # LINE from  NEWARK F 115.00  to  LCKHD J1 115.00
1  35122  35601  "1"    0     # LINE from  NEWARK F 115.00  to  DIXON J1 115.00
1  35122  35603  "1"    0     # LINE from  NEWARK F 115.00  to  ZNKER J1 115.00
1  35122  35624  "1"    0     # LINE from  NEWARK F 115.00  to  MILPITAS 115.00
0

# (12) BUS FAULT  35122  "NEWARK F"
# Newark 115 kV Bus 2 Sec "F"
1  35122  35112  "1"    0     # LINE from  NEWARK F 115.00  to  NUMMI    115.00
1  35122  35360  "1"    0     # LINE from  NEWARK F 115.00  to  LCKHD J2 115.00
1  35122  35600  "1"    0     # LINE from  NEWARK F 115.00  to  DIXON LD 115.00
1  35122  35602  "1"    0     # LINE from  NEWARK F 115.00  to  ZNKER J2 115.00
1  35122  36852  "2"    0     # LINE from  NEWARK F 115.00  to  SCOTT    115.00
0
#
# (13) BUS FAULT  35203  "LIVERMRE"
1  35203  35220  "1"    0     # LINE from  LIVERMRE  60.00  to  LPOSTAS   60.00
1  35203  35222  "1"    0     # LINE from  LIVERMRE  60.00  to  CALMAT60  60.00
1  35203  35217  "1"    0     # LINE from  LIVERMRE  60.00  to  NEWARK    60.00
4  35203     0  "1 "   0     # LOAD-DROP    LIVERMRE  60.00  LOAD==13.442498(3.0685)
0
#
# (14) BUS FAULT  35217  "NEWARK"
1  35217  35215  "1"    0     # LINE from  NEWARK    60.00  to  DECOTO    60.00
1  35217  35216  "1"    0     # LINE from  NEWARK    60.00  to  DCTO JCT  60.00
1  35217  35203  "1"    0     # LINE from  NEWARK    60.00  to  LIVERMRE  60.00
2  35217  35109  "1"    0     # TRAN from  NEWARK    60.00  to  NWRK 2 M 115.00
0
#
#              END OF AREA 16 - MISSION AREA BUS FAULT CONTINGENCY SECTION
#
#
# *********** BUS FAULT CONTINGENCIES for Area 17 - DE ANZA AREA *************
#
# (15) BUS FAULT  30705  "MONTAVIS" BUS #1
1  35455  35458  "1"    0     # Open line from MONTAVIS - PRMNT J1 60 KV
1  35455  35456  "1"    0     # Open line from MONTAVIS - PRMNT J3 60 KV
4  30730  0      "1"    0     # Drop load at HICKS 230 KV
4  30730  0      "2"    0     # Drop load at HICKS 230 KV
4  30730  0      "3"    0     # Drop load at HICKS 230 KV
4  35356  0      "1"    0     # Drop load at MONTAVIS 115 KV
4  30720  0      "1"    0     # Drop load at SARATOGA 230 KV
4  30720  0      "2"    0     # Drop load at SARATOGA 230 KV
4  30720  0      "3"    0     # Drop load at SARATOGA 230 KV
20                            # interim solve

1  30705  30710  "1"    0     # LINE from  MONTAVIS 230.00  to  SLAC JCT 230.00
20                            # interim solve
1  30705  30720  "1"    0     # LINE from  MONTAVIS 230.00  to  SARATOGA 230.00
20                            # interim solve
2  30705  35356  "2"    0     # TRAN from  MONTAVIS 230.00  to  MNTA VSA 115.00
20                            # interim solve
6  30705  0      "v"    0     # drop capacitor banks #1 through #6
7                             # reorder
20                            # interim solve
0
#
# (16) BUS FAULT  30705  "MONTAVIS" BUS #2
1  30705  30715  "1"    0     # LINE from  MONTAVIS 230.00  to  JEFFERSN 230.00
1  30705  30730  "1"    0     # LINE from  MONTAVIS 230.00  to  HICKS    230.00
1  30705  30735  "1"    0     # LINE from  MONTAVIS 230.00  to  METCALF  230.00
2  30705  35356  "4"    0     # TRAN from  MONTAVIS 230.00  to  MNTA VSA 115.00
2  30705  35455  "1"    0     # TRAN from  MONTAVIS 230.00  to  MNTA VSA  60.00
0
#
```

```
# (17) BUS FAULT  30720  "SARATOGA"
1  30720  30705  "1"    0     # LINE from  SARATOGA 230.00  to  MONTAVIS 230.00
1  30720  30733  "1"    0     # LINE from  SARATOGA 230.00  to  VASONA   230.00
4  30720      0  "3 "   0     # LOAD-DROP    SARATOGA 230.00  LOAD==43.405495(9.889499)
4  30720      0  "2 "   0     # LOAD-DROP    SARATOGA 230.00  LOAD==50.625496(11.532999)
4  30720      0  "1 "   0     # LOAD-DROP    SARATOGA 230.00  LOAD==43.158497(9.8325)
0
#
# (18) BUS FAULT  35350  "AMES BS1"
1  35350  33315  "1"    0     # LINE from  AMES BS1 115.00  to  RAVENSWD 115.00
1  35350  35121  "1"    0     # LINE from  AMES BS1 115.00  to  NEWARK E 115.00
1  35350  35121  "2"    0     # LINE from  AMES BS1 115.00  to  NEWARK E 115.00
1  35350  35351  "1"    0     # LINE from  AMES BS1 115.00  to  AMES BS2 115.00
1  35350  35352  "1"    0     # LINE from  AMES BS1 115.00  to  WHISMAN  115.00
1  35350  35353  "1"    0     # LINE from  AMES BS1 115.00  to  MT VIEW  115.00
4  35350      0  "3 "   0     # LOAD-DROP    AMES BS1 115.00  LOAD==37.999996(8.664)
4  35350      0  "1 "   0     # LOAD-DROP    AMES BS1 115.00  LOAD==27.920498(6.364999)
0
#
# (19) BUS FAULT  35351  "AMES BS2"
1  35351  33315  "1"    0     # LINE from  AMES BS2 115.00  to  RAVENSWD 115.00
1  35351  35121  "1"    0     # LINE from  AMES BS2 115.00  to  NEWARK E 115.00
1  35351  35121  "2"    0     # LINE from  AMES BS2 115.00  to  NEWARK E 115.00
1  35351  35350  "1"    0     # LINE from  AMES BS2 115.00  to  AMES BS1 115.00
4  35351      0  "1 "   0     # LOAD-DROP    AMES BS2 115.00  LOAD==37.999996(8.664)
0
#
# (20) BUS FAULT  35356  "MNTA VSA" BUS #1
1  35356  35352  "1"    0     # LINE from  MNTA VSA 115.00  to  WHISMAN  115.00
1  35356  35353  "1"    0     # LINE from  MNTA VSA 115.00  to  MT VIEW  115.00
1  35356  35367  "1"    0     # LINE from  MNTA VSA 115.00  to  PHLPS_JT 115.00
2  35356  30705  "1"    0     # TRAN from  MNTA VSA 115.00  to  MONTAVIS 230.00
2  35356  30705  "2"    0     # TRAN from  MNTA VSA 115.00  to  MONTAVIS 230.00
4  35356      0  "1 "   0     # LOAD-DROP    MNTA VSA 115.00  LOAD==15.513498(3.534)
0
#
# (21) BUS FAULT  35356  "MNTA VSA" BUS #2
1  35356  35354  "1"    0     # LINE from  MNTA VSA 115.00  to  STELLING 115.00
1  35356  35355  "1"    0     # LINE from  MNTA VSA 115.00  to  WOLFE    115.00
1  35356  35368  "1"    0     # LINE from  MNTA VSA 115.00  to  BRITTON  115.00
2  35356  30705  "4"    0     # TRAN from  MNTA VSA 115.00  to  MONTAVIS 230.00
0
#
# (22) BUS FAULT  35455  "MNTA VSA"
1  35455  35452  "1"    0     # LINE from  MNTA VSA  60.00  to  LOYOLA    60.00
1  35455  35456  "1"    0     # LINE from  MNTA VSA  60.00  to  PRMNT J3  60.00
1  35455  35458  "1"    0     # LINE from  MNTA VSA  60.00  to  PRMNT J1  60.00
1  35455  35460  "1"    0     # LINE from  MNTA VSA  60.00  to  LOS GATS  60.00
2  35455  30705  "1"    0     # TRAN from  MNTA VSA  60.00  to  MONTAVIS 230.00
0
#
#              END OF AREA 17 - DE ANZA AREA BUS FAULT CONTINGENCY SECTION
#
#
# *********** BUS FAULT CONTINGENCIES for Area 18 - SAN JOSE AREA *************
#
# (23) BUS FAULT  35709  "LS_ESTRS" BUS 1
1  35709  30630  "1"    0     # LINE from  LS_ESTRS 230.00  to  NEWARK D 230.00
20                            # interim solve
2  35709  35658  "1"    0     # TRAN from  LS_ESTRS 230.00  to  LS ESTRS 115.00
20                            # interim solve
0
#
# (24) BUS FAULT  35709  "LS_ESTRS" BUS 2
2  35709  35658  "2"    0     # TRAN from  LS_ESTRS 230.00  to  LS ESTRS 115.00
20                            # interim solve
1  35709  30630  "2"    0     # LINE from  LS_ESTRS 230.00  to  NEWARK D 230.00
20                            # interim solve
0
#
# (25) BUS FAULT  35658  "LS ESTRS" BUS 1
4  35612  0      "1"    0     # Drop load at TRIMBLE 115 KV
4  35612  0      "2"    0     # Drop load at TRIMBLE 115 KV
4  35612  0      "3"    0     # Drop load at TRIMBLE 115 KV
4  35612  0      "4"    0     # Drop load at TRIMBLE 115 KV
20                            # interim solve
1  35658  35610  "1"    0     # LINE from  LS ESTRS 115.00  to  MONTAGUE 115.00
20                            # interim solve
1  35658  35659  "1"    0     # LINE from  LS ESTRS 115.00  to  NORTECH  115.00
20                            # interim solve
```

```
2  35658  35709  "1"    0     # TRAN from  LS ESTRS 115.00  to  LS_ESTRS 230.00
7                             # reorder
20                            # interim solve
4  35658     0  "1"    0     # LOAD-DROP    LS ESTRS 115.00  LOAD==14.002999(3.192)
6  35658  0      "v"    0     # capacitor drop - LS ESTRS 115.00
20                            # interim solve
0
#
# (26) BUS FAULT  35658  "LS ESTRS" BUS 2
1  35658  35606  "1"    0     # LINE from  LS ESTRS 115.00  to  AGNEW    115.00
20                            # interim solve
1  35658  35612  "1"    0     # LINE from  LS ESTRS 115.00  to  TRIMBLE  115.00
20                            # interim solve
2  35658  35709  "2"    0     # TRAN from  LS ESTRS 115.00  to  LS_ESTRS 230.00
7                             # reorder
20                            # interim solve
0
#
#
# (27) BUS FAULT  30735  "METCALF" BUS SECTION 1D
4  30730  0      "1"    0     # Drop load at HICKS 230 KV
4  30730  0      "2"    0     # Drop load at HICKS 230 KV
4  30730  0      "3"    0     # Drop load at HICKS 230 KV
4  35638  0      "3"    0     # Drop load at EDENVALE 115 KV
4  35638  0      "4"    0     # Drop load at EDENVALE 115 KV
4  35638  0      "2"    0     # Drop load at EDENVALE 115 KV
4  35638  0      "1"    0     # Drop load at EDENVALE 115 KV
4  35620  0      "2"    0     # Drop load at EL PATIO 115 KV
4  35620  0      "1"    0     # Drop load at EL PATIO 115 KV
4  35620  0      "3"    0     # Drop load at EL PATIO 115 KV
4  35648  0      "1"    0     # Drop load at LLAGAS  115 KV
4  35648  0      "2"    0     # Drop load at LLAGAS  115 KV
4  35648  0      "3"    0     # Drop load at LLAGAS  115 KV
20                            # interim solve
1  30735  30631  "1"    0     # LINE from  METCALF  230.00  to  NEWARK E 230.00
20                            # interim solve
1  30735  30733  "1"    0     # LINE from  METCALF  230.00  to  VASONA   230.00
20                            # interim solve
2  35642  30736  "1"    0     # TRAN from  METCALF  230.00  to  MTCALF1M 115.00
20                            # interim solve
6  30735  0      "v"    0     # capacitor drop - METCALF  230.00
7                             # reorder
20                            # interim solve
0
#
# (28) BUS FAULT  30735  "METCALF" BUS SECTION 1E
1  30735  30755  "1"    0     # LINE from  METCALF  230.00  to  MOSSLND1 230.00
2  30738  35643  "1"    0     # TRAN from  MTCALF2M  230.00  to  MTCALF 2 115.00
0
#
#
# (29) BUS FAULT  30735  "METCALF" BUS SECTION 2D
4  30730  0      "1"    0     # Drop load at HICKS 230 KV
4  30730  0      "2"    0     # Drop load at HICKS 230 KV
4  30730  0      "3"    0     # Drop load at HICKS 230 KV
20                            # interim solve
1  30735  30631  "2"    0     # LINE from  METCALF  230.00  to  NEWARK E 230.00
20                            # interim solve
1  30735  30730  "1"    0     # LINE from  METCALF  230.00  to  HICKS    230.00
7                             # reorder
20                            # interim solve
0
#
# (30) BUS FAULT  30735  "METCALF" BUS SECTION 2E
4  30730  0      "1"    0     # Drop load at HICKS 230 KV
4  30730  0      "2"    0     # Drop load at HICKS 230 KV
4  30730  0      "3"    0     # Drop load at HICKS 230 KV
20                            # interim solve
1  30735  30705  "1"    0     # LINE from  METCALF  230.00  to  MONTAVIS 230.00
20                            # interim solve
1  30735  30750  "1"    0     # LINE from  METCALF  230.00  to  MOSSLND2 230.00
20                            # interim solve
2  30738  35643  "1"    0     # TRAN from  METCALF  230.00  to  MTCALF 2 115.00
7                             # reorder
20                            # interim solve
0
#
# (31) BUS FAULT  35600  "DIXON LD"
1  35600  35122  "1"    0     # LINE from  DIXON LD 115.00  to  NEWARK F 115.00
1  35600  35629  "1"    0     # LINE from  DIXON LD 115.00  to  MABURY J 115.00
```

```
4  35600     0  "2 "    0     # LOAD-DROP    DIXON LD 115.00  LOAD==31.8155(9.879999)
4  35600     0  "1 "    0     # LOAD-DROP    DIXON LD 115.00  LOAD==79.077995(25.992001)
0
#
# (32) BUS FAULT  35616  "SJ B   E"
1  35616  35615  "1"    0     # LINE from  SJ B   E 115.00  to  FMC      115.00
1  35616  35613  "1"    0     # LINE from  SJ B   E 115.00  to  GISH JCT 115.00
1  35616  35619  "1"    0     # LINE from  SJ B   E 115.00  to  SJ B   F 115.00
4  35616     0  "1 "    0     # LOAD-DROP    SJ B   E 115.00  LOAD==39.111496(8.911)
6  35616  0      "v"    0     # capacitor drop - SJ B   E 115.00
5  35616  0      "b"    0     # capacitor drop - SJ B   E 115.00
0
#
# (33) BUS FAULT  35618  "SN JSE A" SECTION F
1  35618  35619  "1"    0     # LINE from  SN JSE A 115.00  to  SJ B   F 115.00
2  35618  35864  "1"    0     # TRAN from  SN JSE A 115.00  to  SJ CONV    9.11
4  35618     0  "2 "    0     # LOAD-DROP    SN JSE A 115.00  LOAD==24.880501(4.3605)
0

# (34) BUS FAULT  35618  "SN JSE A" SECTION D
1  35618  35620  "1"    0     # LINE from  SN JSE A 115.00  to  EL PATIO 115.00
4  35618     0  "1 "    0     # LOAD-DROP    SN JSE A 115.00  LOAD==28.224499(6.4315)
6  35618  0      "v"    0     # capacitor drop - SN JSE A 115.00
0
#
# (35) BUS FAULT  35619  "SJ B   F"
1  35619  35616  "1"    0     # LINE from  SJ B   F 115.00  to  SJ B   E 115.00
1  35619  35618  "1"    0     # LINE from  SJ B   F 115.00  to  SN JSE A 115.00
1  35619  35631  "1"    0     # LINE from  SJ B   F 115.00  to  MARKHM J 115.00
4  35619     0  "2 "    0     # LOAD-DROP    SJ B   F 115.00  LOAD==47.024998(10.716)
4  35619     0  "1 "    0     # LOAD-DROP    SJ B   F 115.00  LOAD==47.024998(8.2365)
0
#
# (36) BUS FAULT  35620  "EL PATIO"
1  35620  35618  "1"    0     # LINE from  EL PATIO 115.00  to  SN JSE A 115.00
1  35620  35621  "1"    0     # LINE from  EL PATIO 115.00  to  IBM-HR J 115.00
1  35620  35651  "1"    0     # LINE from  EL PATIO 115.00  to  BAILY J3 115.00
4  35620     0  "3 "    0     # LOAD-DROP    EL PATIO 115.00  LOAD==33.934002(3.4105)
4  35620     0  "2 "    0     # LOAD-DROP    EL PATIO 115.00  LOAD==51.394997(11.7135)
4  35620     0  "1 "    0     # LOAD-DROP    EL PATIO 115.00  LOAD==45.923(10.469)
6  35620  0      "v"    0     # capacitor drop - EL PATIO 115.00
0
#
# (37) BUS FAULT  35633  "EVRGRN 2"
1  35633  35636  "1"    0     # LINE from  EVRGRN 2 115.00  to  EVRGRN 1 115.00
1  35633  35645  "1"    0     # LINE from  EVRGRN 2 115.00  to  EVRGRN J 115.00
2  35633  35753  "1"    0     # TRAN from  EVRGRN 2 115.00  to  EVERGREN  60.00
0
#
# (38) BUS FAULT  35636  "EVRGRN 1"
1  35636  35631  "1"    0     # LINE from  EVRGRN 1 115.00  to  MARKHM J 115.00
1  35636  35633  "1"    0     # LINE from  EVRGRN 1 115.00  to  EVRGRN 2 115.00
1  35636  35643  "1"    0     # LINE from  EVRGRN 1 115.00  to  MTCALF 2 115.00
4  35636     0  "1 "    0     # LOAD-DROP    EVRGRN 1 115.00  LOAD==47.024998(10.716)
0
#
# (39) BUS FAULT  35642  "MTCALF 1" BUS #1 (SECTION E + D)
4  30730  0      "1"    0     # Drop load at HICKS 230 KV
4  30730  0      "2"    0     # Drop load at HICKS 230 KV
4  30730  0      "3"    0     # Drop load at HICKS 230 KV
20                            # interim solve
1  35642  35621  "1"    0     # LINE from  MTCALF 1 115.00  to  IBM-HR J 115.00
20                            # interim solve
1  35642  35641  "1"    0     # LINE from  MTCALF 1 115.00  to  EDNVL J1 115.00
20                            # interim solve
1  35642  35643  "1"    0     # LINE from  MTCALF 1 115.00  to  MTCALF 2 115.00
7                             # reorder
20                            # interim solve
1  35642  35654  "1"    0     # LINE from  MTCALF 1 115.00  to  MORGN J1 115.00
20                            # interim solve
1  35643  35622  "1"    0     # LINE from  MTCALF 2 115.00  to  SWIFT    115.00
20                            # interim solve
1  35643  35636  "1"    0     # LINE from  MTCALF 2 115.00  to  EVRGRN 1 115.00
20                            # interim solve
1  35643  35644  "1"    0     # LINE from  MTCALF 2 115.00  to  CYTE PMP 115.00
7                             # reorder
20                            # interim solve
0
#
# (40) BUS FAULT  35643  "MTCALF 2" BUS SECTION 2 E
```

```
1  35643  35626  "1"    0     # LINE from  MTCALF 2 115.00  to  MCKEE   115.00
1  35643  35645  "1"    0     # LINE from  MTCALF 2 115.00  to  EVRGRN J 115.00
0
#
# (41) BUS FAULT  35643  "MTCALF 2" BUS SECTION 2 D
4  35648  0      "1"    0     # Drop load at LLAGAS 115 KV
4  35648  0      "2"    0     # Drop load at LLAGAS 115 KV
20                            # interim solve
1  35642  35651  "1"    0     # LINE from  MTCALF 1 115.00  to  BAILY J3 115.00
20                            # interim solve
1  35642  35653  "1"    0     # LINE from  MTCALF 1 115.00  to  BAILY J2 115.00
20                            # interim solve
1  35642  35646  "1"    0     # LINE from  MTCALF 1 115.00  to  MRGN HIL 115.00
7                             # reorder
0
#                End Of Area 18 bus section outages
#
# *********** BUS FAULT CONTINGENCIES for Area 19 - CENTRAL COAST AREA *********
#
#
# (42) BUS FAULT  30750  "MOSSLND2" BUS #2
1  30750  30735  "1"    0     # LINE from  MOSSLND2 230.00  to  METCALF  230.00
1  30755  30790  "1"    0     # LINE from  MOSSLND1 230.00  to  PANOCHE  230.00
2  30750  35922  "1"    0     # TRAN from  MOSSLND2 230.00  to  MOSSLND1 115.00
2  30755  30757  "1"    0     # TRAN from  MOSSLND1 230.00  to  MOSSLD2M 230.00
1  30750  30755  "1"    0     # LINE from  MOSSLND2 230.00  to  MOSSLND1 230.00
0
#
# (43) BUS FAULT  30755  "MOSSLND1" BUS #1
1  30755  30735  "1"    0     # LINE from  MOSSLND1 230.00  to  METCALF  230.00
2  30755  30756  "1"    0     # TRAN from  MOSSLND1 230.00  to  MOSSLD1M 230.00
1  30750  30760  "1"    0     # LINE from  MOSSLND2 230.00  to  COBURN   230.00
2  30750  35921  "1"    0     # TRAN from  MOSSLND2 230.00  to  MOSSLND2 115.00
1  30750  30755  "1"    0     # LINE from  MOSSLND2 230.00  to  MOSSLND1 230.00
0
#
# (44) BUS FAULT  35901  "GRN VLY1"
1  35901  35654  "1"    0     # LINE from  GRN VLY1 115.00  to  MORGN J1 115.00
1  35901  35903  "1"    0     # LINE from  GRN VLY1 115.00  to  GRN VLY2 115.00
1  35901  35908  "1"    0     # LINE from  GRN VLY1 115.00  to  ROB ROY  115.00
1  35901  35951  "1"    0     # LINE from  GRN VLY1 115.00  to  WATSNJ1  115.00
2  35901  36008  "1"    0     # TRAN from  GRN VLY1 115.00  to  GREN VLY  60.00
4  35901     0  "1 "   0     # LOAD-DROP    GRN VLY1 115.00  LOAD==34.27(8.588868)
0
#
# (45) BUS FAULT  35903  "GRN VLY2"
1  35903  35655  "1"    0     # LINE from  GRN VLY2 115.00  to  MORGN J2 115.00
1  35903  35901  "1"    0     # LINE from  GRN VLY2 115.00  to  GRN VLY1 115.00
1  35903  35905  "1"    0     # LINE from  GRN VLY2 115.00  to  CMP EVRS 115.00
1  35903  35952  "1"    0     # LINE from  GRN VLY2 115.00  to  WATSNJ2  115.00
4  35903     0  "1 "   0     # LOAD-DROP    GRN VLY2 115.00  LOAD==31.530001(7.902159)
0
#
# (46) BUS FAULT  35907  "PAUL SWT"
1  35907  35905  "1"    0     # LINE from  PAUL SWT 115.00  to  CMP EVRS 115.00
1  35907  35908  "1"    0     # LINE from  PAUL SWT 115.00  to  ROB ROY  115.00
2  35907  36211  "1"    0     # TRAN from  PAUL SWT 115.00  to  CHAMINAD   9.11
2  35907  36218  "1"    0     # TRAN from  PAUL SWT 115.00  to  M        115.00
4  35907     0  "3 "   0     # LOAD-DROP    PAUL SWT 115.00  LOAD==50.150002(11.429301)
4  35907     0  "2 "   0     # LOAD-DROP    PAUL SWT 115.00  LOAD==17.059999(3.888013)
4  35907     0  "1 "   0     # LOAD-DROP    PAUL SWT 115.00  LOAD==29.129999(6.638794)
0
#
# (47) BUS FAULT  35918  "SALINAS2"
1  35918  35913  "1"    0     # LINE from  SALINAS2 115.00  to  NTVD SW2 115.00
1  35918  35920  "1"    0     # LINE from  SALINAS2 115.00  to  SALINAS1 115.00
1  35918  35928  "1"    0     # LINE from  SALINAS2 115.00  to  DOLAN J2 115.00
2  35918  36025  "1"    0     # TRAN from  SALINAS2 115.00  to  SALINAS2  60.00
4  35918     0  "2 "   0     # LOAD-DROP    SALINAS2 115.00  LOAD==28.370001(6.465589)
4  35918     0  "1 "   0     # LOAD-DROP    SALINAS2 115.00  LOAD==32.490002(7.404546)
0
#
# (48) BUS FAULT  35920  "SALINAS1"
1  35920  35914  "1"    0     # LINE from  SALINAS1 115.00  to  NTVD SW1 115.00
1  35920  35918  "1"    0     # LINE from  SALINAS1 115.00  to  SALINAS2 115.00
1  35920  35927  "1"    0     # LINE from  SALINAS1 115.00  to  DOLAN J1 115.00
2  35920  36027  "1"    0     # TRAN from  SALINAS1 115.00  to  SALINAS1  60.00
0
#
# (49) BUS FAULT  35921  "MOSSLND2" SECTION 2D
```

```
1  35921  35952  "1"    0     # LINE from  MOSSLND2 115.00  to  WATSNJ2  115.00
1  35921  35917  "1"    0     # LINE from  MOSSLND2 115.00  to  PRNDL J2 115.00
2  35922  30757  "1"    0     # TRAN from  MOSSLND1 115.00  to  MOSSLD2M 230.00
0
#
# (50) BUS FAULT  35921  "MOSSLND2" SECTION 2E
1  35922  35921  "1"    0     # LINE from  MOSSLND1 115.00  to  MOSSLND2 115.00
1  35921  35923  "1"    0     # LINE from  MOSSLND2 115.00  to  CSTRVLJ2 115.00
1  35921  35928  "1"    0     # LINE from  MOSSLND2 115.00  to  DOLAN J2 115.00
2  35922  30750  "1"    0     # TRAN from  MOSSLND1 115.00  to  MOSSLND2 230.00
0
#
# (51) BUS FAULT  35922  "MOSSLND1" SECTION 1D
1  35922  35951  "1"    0     # LINE from  MOSSLND1 115.00  to  WATSNJ1  115.00
1  35922  35915  "1"    0     # LINE from  MOSSLND1 115.00  to  PRNDL J1 115.00
2  35922  30756  "1"    0     # TRAN from  MOSSLND1 115.00  to  MOSSLD1M 230.00
0
#
# (52) BUS FAULT  35922  "MOSSLND1" SECTION 1E
1  36026  36032  "1"    0     # Open line from FTORD J2 - MZNTA J2
1  36024  36034  "1"    0     # Open line from FTORD J1 - MZNTA J1
1  36024  36028  "1"    1     # Close line from FTORD J1 - BRNDA J1
1  36032  36035  "1"    1     # Close line from MZNTA J2 - DEL MNTE
20                            # interim solve
1  35922  35921  "1"    0     # LINE from  MOSSLND1 115.00  to  MOSSLND2 115.00
20                            # interim solve
1  35922  35925  "1"    0     # LINE from  MOSSLND1 115.00  to  CSTRVLJ1 115.00
20                            # interim solve
1  35922  35927  "1"    0     # LINE from  MOSSLND1 115.00  to  DOLAN J1 115.00
20                            # interim solve
2  35922  30750  "1"    0     # TRAN from  MOSSLND1 115.00  to  MOSSLND2 230.00
7                             # reorder
20                            # interim solve
0
#
#
#                    End Of Area 19 Bus Fault contingencies
#
# End Of Bus Fault Contingency File
#  BREAKER FAILURE CONTINGENCIES for Area 16 - MISSION AREA
#
# (53)  C2 TIE BREAKER FAILURE -202- SAN RAMON 230 KV PG&E
#
1  30555  30526  "1"    0     # LINE from  SANRAMON 230.00  to  PITSBURG 230.00
1  30555  30550  "1"    0     # LINE from  SANRAMON 230.00  to  MORAGA   230.00
2  30555  35209  "1"    0     # TRAN from  SANRAMON 230.00  to  SAN RAMN  60.00
4  30555     0  "1 "    0     # LOAD-DROP    SANRAMON 230.00  LOAD==336.9935(76.797989)
0
#
#
#*(54)  C2 TIE BREAKER FAILURE -200- NEWARK 230 KV PG&E
#
1  30630  35709  "2"    0     # LINE from  NEWARK D 230.00  to  LS_ESTRS 230.00
1  30630  35709  "1"    0     # LINE from  NEWARK D 230.00  to  LS_ESTRS 230.00
1  30630  30585  "1"    0     # LINE from  NEWARK D 230.00  to  LS PSTAS 230.00
1  30630  30624  "1"    0     # LINE from  NEWARK D 230.00  to  TESLA E  230.00
1  30630  30631  "1"    0     # LINE from  NEWARK D 230.00  to  NEWARK E 230.00
1  30630  30700  "1"    0     # LINE from  NEWARK D 230.00  to  SANMATEO 230.00
2  30630  30627  "9"    0     # TRAN from  NEWARK D 230.00  to  NWRK  9M  13.20
2  30630  30626  "7"    0     # TRAN from  NEWARK D 230.00  to  NWRK  7M  13.20
7
20
0
#
# (55)  C2 TIE BREAKER FAILURE -800- NEWARK 230 KV PG&E
#
1  30631  30554  "1"    0     # LINE from  NEWARK E 230.00  to  CASTROVL 230.00
1  30631  30562  "1"    0     # LINE from  NEWARK E 230.00  to  TES JCT  230.00
1  30631  30630  "1"    0     # LINE from  NEWARK E 230.00  to  NEWARK D 230.00
1  30631  30735  "1"    0     # LINE from  NEWARK E 230.00  to  METCALF  230.00
1  30631  30735  "2"    0     # LINE from  NEWARK E 230.00  to  METCALF  230.00
2  30631  30628  "11"   0     # TRAN from  NEWARK E 230.00  to  NWRK 11M  13.20
4  30631     0   "1 "   0     # LOAD-DROP    NEWARK E 230.00  LOAD==157.481491(76.265991)
7
20
0
#
# (56)  C2 SECTIONALIZING BREAKER FAILURE -810- NEWARK 230 KV PG&E
#
#  Newark 230 kV bus tie breaker 810 failure
```

```
#
1  30630 30700  "1 "    0     # LINE from NEWARK D 230.00  BRKR to BRKR  SANMATEO 230.00
2  30630 35121  "7 "    0     # TRAN from NEWARK D 230.00  BRKR to BRKR  NEWARK E 115.00
1  30585 30630  "1 "    0     # line from LS PSTAS 230.0 to NEWARK D 230.0
1  30624 30630  "1 "    0     # line from TESLA E  230.00  BRKR to BRKR  NEWARK D 230.00
20
1  30631 30735  "1 "    0     # line from NEWARK E 230.00  BRKR to BRKR  METCALF  230.00
1  30554 30631  "1 "    0     # line from CASTROVL 230.00 to NEWARK E 230.00
1  30630 35709  "1 "    0     # line from NEWARK D 230.00  BRKR to BRKR  LS_ESTRS 230.00
#
0
#
# (57) * C2 SECTIONALIZING BREAKER FAILURE -820- NEWARK 230 KV PG&E
#
2  30630 35120  "9 "    0     # TRAN from NEWARK D 230.00  BRKR to BRKR  NEWARK D 115.00
1  30590 30630  "1 "    0     # line from USWP-JRW 230.00 to NEWARK D 230.00
20
1  30630 35709  "2 "    0     # line from  NEWARK D 230.00  BRKR to BRKR  LS_ESTRS 230.00
2  30631 35122  "11"    0     # TRAN from NEWARK E 230.00  BRKR to BRKR  NEWARK F 115.00
1  30562 30631  "1 "    0     # line from TES JCT 230 to NEWARK E 230.00
6  30631     0  "v"    0     # SVD on Newark D bus
#
0
#
#
# (58)  C2 BANK BREAKER FAILURE -750- NEWARK 115 KV PG&E
#
1  35120  35111  "1"    0     # LINE from  NEWARK D 115.00  to  JARVIS   115.00
1  35120  36852  "1"    0     # LINE from  NEWARK D 115.00  to  SCOTT    115.00
1  35120  36960  "1"    0     # LINE from  NEWARK D 115.00  to  OAKDLTID 115.00
2  35120  30627  "9"    0     # TRAN from  NEWARK D 115.00  to  NWRK  9M  13.20
7
20
0
#
#
# (59)  C2 BANK BREAKER FAILURE -760- NEWARK 115 KV PG&E
#
1  35120  35107  "1"    0     # LINE from  NEWARK D 115.00  to  DUMBARTN 115.00
1  35120  35111  "2"    0     # LINE from  NEWARK D 115.00  to  JARVIS   115.00
1  35120  36960  "2"    0     # LINE from  NEWARK D 115.00  to  OAKDLTID 115.00
2  35120  35109  "1"    0     # TRAN from  NEWARK D 115.00  to  NWRK 2 M 115.00
2  35120  30627  "9"    0     # TRAN from  NEWARK D 115.00  to  NWRK  9M  13.20
7
20
0
#
# (60)  C2 BANK BREAKER FAILURE -460- NEWARK 115 KV PG&E
#
1  35121  35110  "1"    0     # LINE from  NEWARK E 115.00  to  FREMNT   115.00
1  35121  35350  "1"    0     # LINE from  NEWARK E 115.00  to  AMES BS1 115.00
1  35121  35351  "1"    0     # LINE from  NEWARK E 115.00  to  AMES BS2 115.00
2  35121  30626  "7"    0     # TRAN from  NEWARK E 115.00  to  NWRK  7M  13.20
0
#
#
# (61)  C2 BANK BREAKER FAILURE -470- NEWARK 115 KV PG&E
#
1  35121  35110  "2"    0     # LINE from  NEWARK E 115.00  to  FREMNT   115.00
1  35121  35350  "2"    0     # LINE from  NEWARK E 115.00  to  AMES BS1 115.00
1  35121  35351  "2"    0     # LINE from  NEWARK E 115.00  to  AMES BS2 115.00
2  35121  30626  "7"    0     # TRAN from  NEWARK E 115.00  to  NWRK  7M  13.20
0
#
# (62)  C2 BANK BREAKER FAILURE -770- NEWARK 115 KV PG&E
#
1  35122  35357  "1"    0     # LINE from  NEWARK F 115.00  to  LCKHD J1 115.00
1  35122  35601  "1"    0     # LINE from  NEWARK F 115.00  to  DIXON J1 115.00
1  35122  35603  "1"    0     # LINE from  NEWARK F 115.00  to  ZNKER J1 115.00
1  35122  35624  "1"    0     # LINE from  NEWARK F 115.00  to  MILPITAS 115.00
2  35122  30628  "11"    0     # TRAN from  NEWARK F 115.00  to  NWRK 11M  13.20
0
#
# (63)  C2 BANK BREAKER FAILURE -780- NEWARK 115 KV PG&E
#
1  35122  35112  "1"    0     # LINE from  NEWARK F 115.00  to  NUMMI    115.00
1  35122  35360  "1"    0     # LINE from  NEWARK F 115.00  to  LCKHD J2 115.00
1  35122  35600  "1"    0     # LINE from  NEWARK F 115.00  to  DIXON LD 115.00
1  35122  35602  "1"    0     # LINE from  NEWARK F 115.00  to  ZNKER J2 115.00
1  35122  36852  "2"    0     # LINE from  NEWARK F 115.00  to  SCOTT    115.00
```

```
2  35122  30628  "11"   0      # TRAN from  NEWARK F 115.00  to  NWRK 11M  13.20
4  35112      0  "1"    0      # LOAD-DROP  NUMMI    30.0(20.3)
7
20
0
#
#
# (64)  C2 SECTIONALIZING BREAKER FAILURE -420- NEWARK 115 KV PG&E
#
1  35120  35111  "1"    0      # LINE from  NEWARK D 115.00  to  JARVIS   115.00
1  35120  36852  "1"    0      # LINE from  NEWARK D 115.00  to  SCOTT    115.00
1  35120  36960  "1"    0      # LINE from  NEWARK D 115.00  to  OAKDLTID 115.00
1  35121  35110  "1"    0      # LINE from  NEWARK E 115.00  to  FREMNT   115.00
1  35121  35350  "1"    0      # LINE from  NEWARK E 115.00  to  AMES BS1 115.00
1  35121  35351  "1"    0      # LINE from  NEWARK E 115.00  to  AMES BS2 115.00
0
#
#
# (65)  C2 SECTIONALIZING BREAKER FAILURE -430- NEWARK 115 KV PG&E
#
1  35120  35107  "1"    0      # LINE from  NEWARK D 115.00  to  DUMBARTN 115.00
1  35120  35111  "2"    0      # LINE from  NEWARK D 115.00  to  JARVIS   115.00
1  35120  36960  "2"    0      # LINE from  NEWARK D 115.00  to  OAKDLTID 115.00
2  35120  35109  "1"    0      # TRAN from  NEWARK D 115.00  to  NWRK 2 M 115.00
1  35121  35110  "2"    0      # LINE from  NEWARK E 115.00  to  FREMNT   115.00
1  35121  35350  "2"    0      # LINE from  NEWARK E 115.00  to  AMES BS1 115.00
1  35121  35351  "2"    0      # LINE from  NEWARK E 115.00  to  AMES BS2 115.00
0
#
# (66)  C2 SECTIONALIZING BREAKER FAILURE -720- NEWARK 115 KV PG&E
#
1  35121  35110  "1"    0      # LINE from  NEWARK E 115.00  to  FREMNT   115.00
1  35121  35350  "1"    0      # LINE from  NEWARK E 115.00  to  AMES BS1 115.00
1  35121  35351  "1"    0      # LINE from  NEWARK E 115.00  to  AMES BS2 115.00
1  35122  35357  "1"    0      # LINE from  NEWARK F 115.00  to  LCKHD J1 115.00
1  35122  35601  "1"    0      # LINE from  NEWARK F 115.00  to  DIXON J1 115.00
1  35122  35603  "1"    0      # LINE from  NEWARK F 115.00  to  ZNKER J1 115.00
1  35122  35624  "1"    0      # LINE from  NEWARK F 115.00  to  MILPITAS 115.00
0
#
#
# (67)  C2 SECTIONALIZING BREAKER FAILURE -730- NEWARK 115 KV PG&E
#
1  35121  35110  "2"    0      # LINE from  NEWARK E 115.00  to  FREMNT   115.00
1  35121  35350  "2"    0      # LINE from  NEWARK E 115.00  to  AMES BS1 115.00
1  35121  35351  "2"    0      # LINE from  NEWARK E 115.00  to  AMES BS2 115.00
1  35122  35112  "1"    0      # LINE from  NEWARK F 115.00  to  NUMMI    115.00
1  35122  35360  "1"    0      # LINE from  NEWARK F 115.00  to  LCKHD J2 115.00
1  35122  35600  "1"    0      # LINE from  NEWARK F 115.00  to  DIXON LD 115.00
1  35122  35602  "1"    0      # LINE from  NEWARK F 115.00  to  ZNKER J2 115.00
1  35122  36852  "2"    0      # LINE from  NEWARK F 115.00  to  SCOTT    115.00
4  35112      0  "1"    0      # LOAD-DROP  NUMMI    30.0(20.3)
0
#
#
#**********************END OF AREA 16 - MISSION AREA BREAKER FAILURES*******************
#
#  BREAKER FAILURE CONTINGENCIES for Area 17 - DE ANZA AREA
#  Section Breaker Outage file
#  11-20-1999
#
#
# (68) C2 TIE BREAKER FAILURE -202- MONTA VISTA 230 KV
1  35356  35352  "1"    0      # Open line from MONTAVIS - WHISMAN
1  35356  35353  "1"    0      # Open line from MONTAVIS - MT VIEW
1  35356  35354  "1"    0      # Open line from MONTAVIS - STELLING
1  35356  35355  "1"    0      # Open line from MONTAVIS - WOLFE
20
1  35455  35458  "1"    0      # Open line from MONTAVIS - PRMNT J1 60 KV
1  35455  35456  "1"    0      # Open line from MONTAVIS - PRMNT J3 60 KV
4  35356  0      "1"    0      # Drop load at MONTAVIS 115 KV
4  30711  0      "1"    0      # Drop load at SLAC
20                             # interim solve
1  30705  30710  "1"    0      # LINE from  MONTAVIS 230.00  to  SLAC JCT 230.00
20                             # interim solve
1  30705  30715  "1"    0      # LINE from  MONTAVIS 230.00  to  JEFFERSN 230.00
20                             # interim solve
1  30705  30720  "1"    0      # LINE from  MONTAVIS 230.00  to  SARATOGA 230.00
20                             # interim solve
1  30705  30730  "1"    0      # LINE from  MONTAVIS 230.00  to  HICKS    230.00
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20                                  # interim solve
1  30705  30735  "1"    0          # LINE from  MONTAVIS 230.00  to  METCALF  230.00
20                                  # interim solve
2  30705  35356  "2"    0          # TRAN from  MONTAVIS 230.00  to  MNTA VSA 115.00
20                                  # interim solve
2  30705  35356  "4"    0          # TRAN from  MONTAVIS 230.00  to  MNTA VSA 115.00
20                                  # interim solve
2  30705  35455  "1"    0          # TRAN from  MONTAVIS 230.00  to  MNTA VSA  60.00
20                                  # interim solve
6  30705  0      "v"    0          # drop capacitor banks #1 through #6
7                                   # reorder
20                                  # interim solve
0
#
# (69) C2 TIE BREAKER FAILURE -102- MONTA VISTA 115 KV
1  35356  35352  "1"    0          # LINE from  MNTA VSA 115.00  to  WHISMAN  115.00
1  35356  35353  "1"    0          # LINE from  MNTA VSA 115.00  to  MT VIEW  115.00
1  35356  35354  "1"    0          # LINE from  MNTA VSA 115.00  to  STELLING 115.00
1  35356  35355  "1"    0          # LINE from  MNTA VSA 115.00  to  WOLFE    115.00
1  35356  35367  "1"    0          # LINE from  MNTA VSA 115.00  to  PHLPS_JT 115.00
1  35356  35368  "1"    0          # LINE from  MNTA VSA 115.00  to  BRITTON  115.00
2  35356  30705  "2"    0          # TRAN from  MNTA VSA 115.00  to  MONTAVIS 230.00
2  35356  30705  "4"    0          # TRAN from  MNTA VSA 115.00  to  MONTAVIS 230.00
4  35356      0  "1 "   0          # LOAD-DROP    MNTA VSA 115.00  LOAD==15.513498(3.534)
0
#
#************************ END OF AREA 17 BREAKER FAILURES ************************
#
#   BREAKER FAILURE CONTINGENCY file for Area 18 - San Jose Division
#   7-19-99
#
#
#  (70)* C2 SECTIONALIZING BREAKER FAILURE -162- SAN JOSE B 115 KV
1  35616  35615  "1"    0          # LINE from  SJ B   E 115.00  to  FMC      115.00
1  35616  35613  "1"    0          # LINE from  SJ B   E 115.00  to  GISH JCT 115.00
1  35616  35619  "1"    0          # LINE from  SJ B   E 115.00  to  SJ B   F 115.00
4  35616      0  "1 "   0          # LOAD-DROP    SJ B   E 115.00  LOAD==32.823364(5.750336)
6  35616      0  "v"    0          # capacitor bank - drop - SJ B E 115.00
5  35616      0  "b"    0          # capacitor bank - drop - SJ B E 115.00
1  35619  35616  "1"    0          # LINE from  SJ B   F 115.00  to  SJ B   E 115.00
1  35619  35618  "1"    0          # LINE from  SJ B   F 115.00  to  SN JSE A 115.00
1  35619  35631  "1"    0          # LINE from  SJ B   F 115.00  to  MARKHM J 115.00
4  35619      0  "2 "   0          # LOAD-DROP    SJ B   F 115.00  LOAD==47.024998(10.716)
4  35619      0  "1 "   0          # LOAD-DROP    SJ B   F 115.00  LOAD==47.024998(8.2365)
0
#
#
#  (71) C2 TIE BREAKER FAILURE -XXX- LS_ESTRS 230.00 (PROJECT IN PROGRESS)
4  35612  0      "1"    0          # Drop load at TRIMBLE 115 KV
4  35612  0      "2"    0          # Drop load at TRIMBLE 115 KV
4  35612  0      "3"    0          # Drop load at TRIMBLE 115 KV
4  35612  0      "4"    0          # Drop load at TRIMBLE 115 KV
20                                  # interim solve
4  35658      0  "1 "   0          # LOAD-DROP    LS ESTRS 115.00  LOAD==14.002999(3.192)
1  35709  30630  "1"    0          # LINE from  LS_ESTRS 230.00  to  NEWARK D 230.00
20                                  # interim solve
1  35709  30630  "2"    0          # LINE from  LS_ESTRS 230.00  to  NEWARK D 230.00
20                                  # interim solve
2  35709  35658  "1"    0          # TRAN from  LS_ESTRS 230.00  to  LS ESTRS 115.00
20                                  # interim solve
2  35709  35658  "2"    0          # TRAN from  LS_ESTRS 230.00  to  LS ESTRS 115.00
7                                   # reorder
0
#
#  (72)* C2 SECTIONALIZING BREAKER FAILURE -312- METCALF 230 KV
#
# Metcalf 230 kV bus tie breaker 312 failure
#
1  30733  30735  "1 "   0         # Line from Vasona 230.00  to Metcalf  230.00
1  30631  30735  "1 "   0         # Line from Newark 230.00  to Metcalf  230.00
1  30735 30736  "1 "    0          # line from  METCALF  230.00  BRKR to (3)   MTCALF1M 230.00
20
1  30735 30750  "1 "    0          # line from  METCALF  230.00  BRKR to BRKR  MOSSLND1 230.00
1  30735 30740  "1 "    0          # line from  METCALF  230.00  BRKR to (3)   METC3 MP 230.00
2  30740 35643  "1 "    0          # TRAN from  METC3 MP 230.00   (3) to BRKR  MTCALF 2 115.00
1  30705 30735  "1 "    0          # line from  MONTAVIS 230.00  BRKR to BRKR  METCALF  230.00
#
0
#
#  (73) C2 SECTIONALIZING BREAKER FAILURE -322- METCALF 230 KV
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#
6  30735     0  "v"     0     # SVD from Metcalf  230.00
1  30631 30735  "2 "    0     # Line from Newark 230.00  to Metcalf  230.00
1  30730 30735  "1 "    0     # line from  HICKS    230.00  BRKR to BRKR  METCALF  230.00
20
1  30735 30755  "1 "    0     # line from  METCALF  230.00  BRKR to BRKR  MOSSLND2 230.00
1  30735 30741  "1 "    0     # line from  METCALF  230.00  BRKR to       CAL METC
230.00(revised PME8 7/9/99)
1  30741 30705  "1 "    0     # line from  CAL METC 230.00       to BRKR  MONTAVIS
230.00(revised PME8 7/9/99)
1  30735 30738  "1 "    0     # line from  METCALF  230.00  BRKR to (3)   MTCALF2M 230.00
2  30738 35643  "1 "    0     # TRAN from  MTCALF2M 230.00   (3) to BRKR  MTCALF 2 115.00
0
#
#
#  (74)* C2 SECTIONALIZING BREAKER FAILURE -492- METCALF 115 KV
4  35648  0      "1"    0     # Drop load at LLAGAS 115 KV
4  35648  0      "2"    0     # Drop load at LLAGAS 115 KV
20                             # interim solve
1  35642  35651  "1"    0     # LINE from  MTCALF 1 115.00  to  BAILY J3 115.00
20                             # interim solve
1  35642  35653  "1"    0     # LINE from  MTCALF 1 115.00  to  BAILY J2 115.00
20                             # interim solve
1  35642  35646  "1"    0     # LINE from  MTCALF 1 115.00  to  MRGN HIL 115.00
20                             # interim solve
1  35643  35626  "1"    0     # LINE from  MTCALF 2 115.00  to  MCKEE    115.00
20                             # interim solve
1  35643  35645  "1"    0     # LINE from  MTCALF 2 115.00  to  EVRGRN J 115.00
20                             # interim solve
1  35642  35643  "1"    0     # LINE from  MTCALF 1 115.00  to  MTCALF 2 115.00
7                              # reorder
20                             # interim solve
0
#
#
#  (75) C2 SECTIONALIZING BREAKER FAILURE -332- SAN JOSE STA A 115 KV
1  35618  35619  "1"    0     # LINE from  SN JSE A 115.00  to  SJ B   F 115.00
2  35618  35864  "1"    0     # TRAN from  SN JSE A 115.00  to  SJ CONV    9.11
4  35618  0      "2 "   0     # LOAD-DROP    SN JSE A 115.00  LOAD==24.880501(4.3605)
1  35618  35620  "1"    0     # LINE from  SN JSE A 115.00  to  EL PATIO 115.00
4  35618  0      "1 "   0     # LOAD-DROP    SN JSE A 115.00  LOAD==28.224499(6.4315)
6  35618  0      "v"    0     # capacitor drop - SN JSE A 115.00
0
#
#
# ************* END OF AREA 18 BREAKER FAILURE CONTINGENCY FILES *******************
#
#   BREAKER FAILURE CONTINGENCY file for Area 19 - CENTRAL COAST AREA
#   7-19-99
#
#
# (76)*C2 TIE BREAKER FAILURE -102- GREEN VALLEY 115 KV
1  35901  35654  "1"    0     # LINE from  GRN VLY1 115.00  to  MORGN J1 115.00
1  35901  35903  "1"    0     # LINE from  GRN VLY1 115.00  to  GRN VLY2 115.00
1  35901  35908  "1"    0     # LINE from  GRN VLY1 115.00  to  ROB ROY  115.00
1  35901  35951  "1"    0     # LINE from  GRN VLY1 115.00  to  WATSNJ1 115.00
2  35901  36008  "1"    0     # TRAN from  GRN VLY1 115.00  to  GREN VLY  60.00
4  35901     0   "1"    0     # LOAD-DROP    GRN VLY1 115.00  LOAD==34.27(8.588868)
1  35903  35655  "1"    0     # LINE from  GRN VLY2 115.00  to  MORGN J2 115.00
1  35903  35901  "1"    0     # LINE from  GRN VLY2 115.00  to  GRN VLY1 115.00
1  35903  35905  "1"    0     # LINE from  GRN VLY2 115.00  to  CMP EVRS 115.00
1  35903  35952  "1"    0     # LINE from  GRN VLY2 115.00  to  WATSNJ2 115.00
4  35903     0  "1 "   0     # LOAD-DROP    GRN VLY2 115.00  LOAD==31.530001(7.902159)
0
#
# (77) *C2 TIE BREAKER FAILURE -200- MOSS LANDING 230 KV
1  36026  36032  "1"    0     # Open line from FTORD J2 - MZNTA J2
1  36024  36034  "1"    0     # Open line from FTORD J1 - MZNTA J1
1  36024  36028  "1"    1     # Close line from FTORD J1 - BRNDA J1
1  36032  36035  "1"    1     # Close line from MZNTA J2 - DEL MNTE
1  35916  35915  "1"    0     # Open line from PRUNEDLE - PRNDL J1
1  35916  35917  "1"    1     # Close line from PRUNEDLE - PRNDL J2
20                             # interim solve
1  35922  35925  "1"    0     # Isolate Moss Landing 115 Bus 1
1  35922  35927  "1"    0     #
1  35922  35915  "1"    0     #
1  35922  35951  "1"    0     # MOSSLND1 to WATSNJ1 115 kV
1  35921  35923  "1"    0     # Isolate Moss Landing 115 Bus 2
1  35921  35928  "1"    0     #
1  35921  35917  "1"    0     #
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```
1  35921  35952  "1"    0     # MOSSLND1 to WATSNJ2 115 kV
1  36025  36022  "1"    0     # LINE from  SALINAS2  60.00  to  LGNTS J2  60.00
1  35914  35911  "1"    0     # Open line from LAGUNITAS J TO NATIVIDAD J
1  35913  35912  "1"    0     # Open line from LAGUNITAS J TO NATIVIDAD J
20                            # interim solve
1  30750  30755  "1"    0     # LINE from  MOSSLND2 230.00  to  MOSSLND1 230.00
1  30750  30735  "1"    0     # LINE from  MOSSLND2 230.00  to  METCALF  230.00
2  30750  30045  "1"    0     # TRAN from  MOSSLND2 230.00  to  MOSSLAND 500.00
2  30750  35921  "1"    0     # TRAN from  MOSSLND2 230.00  to  MOSSLND2 115.00
1  30755  30790  "1"    0     # LINE from  MOSSLND1 230.00  to  PANOCHE  230.00
1  30755  30735  "1"    0     # LINE from  MOSSLND1 230.00  to  METCALF  230.00
2  30755  30756  "1"    0     # TRAN from  MOSSLND1 230.00  to  MOSSLD1M 230.00
2  30755  30757  "1"    0     # TRAN from  MOSSLND1 230.00  to  MOSSLD2M 230.00
2  30755  36403  "1"    0     # TRAN from  MOSSLND1 230.00  to  MOSSLND4  13.80
2  30755  36402  "1"    0     # TRAN from  MOSSLND1 230.00  to  MOSSLND3  13.80
2  30755  36404  "1"    0     # TRAN from  MOSSLND1 230.00  to  MOSSLND5  13.80
1  30750  30760  "1"    0     # LINE from  MOSSLND2 230.00  to  COBURN   230.00
2  30750  35922  "1"    0     # TRAN from  MOSSLND2 230.00  to  MOSSLND1 115.00
0
#
# (78) C2 TIE BREAKER FAILURE -192- SALINAS 115 KV
1  36026  36032  "1"    0     # Open line from FTORD J2 - MZNTA J2
1  36024  36034  "1"    0     # Open line from FTORD J1 - MZNTA J1
1  36024  36028  "1"    1     # Close line from FTORD J1 - BRNDA J1
1  36032  36035  "1"    1     # Close line from MZNTA J2 - DEL MNTE
1  35916  35915  "1"    0     # Open line from PRUNEDLE - PRNDL J1
1  35916  35917  "1"    1     # Close line from PRUNEDLE - PRNDL J2
20                            # interim solve
1  36025  36022  "1"    0     # LINE from  SALINAS2  60.00  to  LGNTS J2  60.00
20                            # interim solve
2  35918  36025  "1"    0     # TRAN from  SALINAS2 115.00  to  SALINAS2  60.00
20                            # interim solve
2  35920  36027  "1"    0     # TRAN from  SALINAS1 115.00  to  SALINAS1  60.00
20                            # interim solve
1  35918  35913  "1"    0     # LINE from  SALINAS2 115.00  to  NTVD SW2 115.00
20                            # interim solve
1  35918  35920  "1"    0     # LINE from  SALINAS2 115.00  to  SALINAS1 115.00
20                            # interim solve
1  35918  35928  "1"    0     # LINE from  SALINAS2 115.00  to  DOLAN J2 115.00
20                            # interim solve
4  35918     0  "2 "    0     # LOAD-DROP    SALINAS2 115.00  LOAD==28.370001(6.465589)
4  35918     0  "1 "    0     # LOAD-DROP    SALINAS2 115.00  LOAD==32.490002(7.404546)
20                            # interim solve
1  35920  35914  "1"    0     # LINE from  SALINAS1 115.00  to  NTVD SW1 115.00
20                            # interim solve
0
#
# (79) *C2 SECTIONALIZING BREAKER FAILURE -120- MOSS LANDING 115  KV SECTIONS 2E AND 2D
1  36026  36032  "1"    0     # Open line from FTORD J2 - MZNTA J2
1  36024  36034  "1"    0     # Open line from FTORD J1 - MZNTA J1
1  36024  36028  "1"    1     # Close line from FTORD J1 - BRNDA J1
1  36032  36035  "1"    1     # Close line from MZNTA J2 - DEL MNTE
1  35916  35915  "1"    0     # Open line from PRUNEDLE - PRNDL J1
1  35916  35917  "1"    1     # Close line from PRUNEDLE - PRNDL J2
20                            # interim solve
4  35907  0      "1"    0     # Drop load at PAUL SWT  115.00
4  35907  0      "2"    0     # Drop load at PAUL SWT  115.00
4  35907  0      "3"    0     # Drop load at PAUL SWT  115.00
4  35901  0      "1"    0     # Drop load at GRN VLY1  115.00
20                            # interim solve
1  35922  35921  "1"    0     # LINE from  MOSSLND1 115.00  to  MOSSLND2 115.00
20                            # interim solve
1  35921  35923  "1"    0     # LINE from  MOSSLND2 115.00  to  CSTRVLJ2 115.00
20                            # interim solve
1  35921  35928  "1"    0     # LINE from  MOSSLND2 115.00  to  DOLAN J2 115.00
20                            # interim solve
2  35921  30750  "1"    0     # TRAN from  MOSSLND2 115.00  to  MOSSLND2 230.00
20                            # interim solve
1  35921  35952  "1"    0     # LINE from  MOSSLND2 115.00  to  WATSNJ2 115.00
20                            # interim solve
1  35921  35917  "1"    0     # LINE from  MOSSLND2 115.00  to  PRNDL J2 115.00
20                            # interim solve
2  35922  30757  "1"    0     # TRAN from  MOSSLND1 115.00  to  MOSSLD2M 230.00
20                            # interim solve
0
#
# (80) C2 TIE BREAKER FAILURE -500- MOSS LANDING 115 KV (SECTIONS 1E AND 2E)
1  36026  36032  "1"    0     # Open line from FTORD J2 - MZNTA J2
1  36024  36034  "1"    0     # Open line from FTORD J1 - MZNTA J1
1  36024  36028  "1"    1     # Close line from FTORD J1 - BRNDA J1
```

```
1  36032  36035  "1"   1     # Close line from MZNTA J2 - DEL MNTE
1  35916  35915  "1"   0     # Open line from PRUNEDLE - PRNDL J1
1  35916  35917  "1"   1     # Close line from PRUNEDLE - PRNDL J2
20
4  35907  0      "1"   0     # Drop load at PAUL SWT  115.00
4  35909  0      "1"   0     # Drop load at HOLLISTR  115.00
20
1  35922  35921  "1"   0     # LINE from  MOSSLND1 115.00  to  MOSSLND2 115.00
20                           # interim solve
1  35922  35925  "1"   0     # LINE from  MOSSLND1 115.00  to  CSTRVLJ1 115.00
20                           # interim solve
1  35922  35927  "1"   0     # LINE from  MOSSLND1 115.00  to  DOLAN J1 115.00
20                           # interim solve
2  35921  30750  "1"   0     # TRAN from  MOSSLND2 115.00  to  MOSSLND2 230.00
20                           # interim solve
1  35921  35923  "1"   0     # LINE from  MOSSLND2 115.00  to  CSTRVLJ2 115.00
20                           # interim solve
1  35921  35928  "1"   0     # LINE from  MOSSLND2 115.00  to  DOLAN J2 115.00
20                           # interim solve
2  35922  30750  "1"   0     # TRAN from  MOSSLND1 115.00  to  MOSSLND2 230.00
20                           # interim solve
0
#
# (81) *C2 SECTIONALIZING BREAKER FAILURE -110- MOSS LANDING 115 KV SECTIONS 1E/1D
1  36026  36032  "1"   0     # Open line from FTORD J2 - MZNTA J2
1  36024  36034  "1"   0     # Open line from FTORD J1 - MZNTA J1
1  36024  36028  "1"   1     # Close line from FTORD J1 - BRNDA J1
1  36032  36035  "1"   1     # Close line from MZNTA J2 - DEL MNTE
1  35916  35915  "1"   0     # Open line from PRUNEDLE - PRNDL J1
1  35916  35917  "1"   1     # Close line from PRUNEDLE - PRNDL J2
20
1  35922  35951  "1"   0     # LINE from  MOSSLND1 115.00  to  WATSNJ1 115.00
20                           # interim solve
1  35922  35915  "1"   0     # LINE from  MOSSLND1 115.00  to  PRNDL J1 115.00
20                           # interim solve
2  35922  30756  "1"   0     # TRAN from  MOSSLND1 115.00  to  MOSSLD1M 230.00
20                           # interim solve
1  35922  35921  "1"   0     # LINE from  MOSSLND1 115.00  to  MOSSLND2 115.00
7                            # reorder
20                           # interim solve
1  35922  35925  "1"   0     # LINE from  MOSSLND1 115.00  to  CSTRVLJ1 115.00
20                           # interim solve
1  35922  35927  "1"   0     # LINE from  MOSSLND1 115.00  to  DOLAN J1 115.00
20                           # interim solve
2  35922  30750  "1"   0     # TRAN from  MOSSLND1 115.00  to  MOSSLND2 230.00
7                            # reorder
20                           # interim solve
0
#
# (82) C2 TIE BREAKER FAILURE -112- SALINAS 60 KV
1  36025  36022  "1"   0     # LINE from  SALINAS2  60.00  to  LGNTS J2  60.00
1  36025  36023  "1"   0     # LINE from  SALINAS2  60.00  to  GABILAN   60.00
1  36025  36027  "1"   0     # LINE from  SALINAS2  60.00  to  SALINAS1  60.00
1  36025  36028  "1"   0     # LINE from  SALINAS2  60.00  to  BRNDA J1  60.00
1  36025  36030  "1"   0     # LINE from  SALINAS2  60.00  to  BRNDA J2  60.00
1  36025  36043  "1"   0     # LINE from  SALINAS2  60.00  to  RSVTN RD  60.00
2  36025  35918  "1"   0     # TRAN from  SALINAS2  60.00  to  SALINAS2 115.00
2  36025  36213  "1"   0     # TRAN from  SALINAS2  60.00  to  SUNNYSID   9.11
1  36027  36046  "1"   0     # LINE from  SALINAS1  60.00  to  NSTLE JT  60.00
1  36027  36054  "1"   0     # LINE from  SALINAS1  60.00  to  SNBRN JT  60.00
2  36027  35920  "1"   0     # TRAN from  SALINAS1  60.00  to  SALINAS1 115.00
0
-1
# ********************** END OF AREA 19 BREAKER FAILURES **********************
# END OF BREAKER FAILURE FILE
# END OF METCALF POWER FLOW CONTINGENCY FILE
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Attachment 2:
Level B Contingency List

ATTACHMENT 2: Level B Contingency List

```
# Autocon input file for MEC Detailed Facility Study
#
# (1)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30561 30562  "1 "    0     # line from  TASSAJAR 230.00  BRKR to (3)   TES JCT  230.00
1  30562 30631  "1 "    0     # line from  TES JCT  230.00   (3) to BRKR  NEWARK E 230.00
1  30562 30563  "1 "    0     # line from  TES JCT  230.00   (3) to (1)   TES SUB  230.00
4  30563         0  "1 "    0     # LOAD-DROP    TES SUB  230.00  LOAD==39.18(8.93)
0
#
# (2)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30525 30700  "1 "    0     # line from  C.COSTA  230.00  BRKR to BRKR  SANMATEO 230.00
0
#
# (3)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30467 30550  "1 "    0     # line from  PARKWAY  230.00   (2) to BRKR  MORAGA   230.00
1  30467 30460  "1 "    0     # line from  PARKWAY  230.00   (2) to BRKR  VACA-DIX 230.00
4  30467     0  "1 "    0     # LOAD-DROP    PARKWAY  230.00  LOAD==12.9577(1.846371)
0
#
# (4)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33154 33150  "1 "    0     # line from  FOSTERW2  12.47   (1) to BRKR  TOSCO     12.47
0
#
# (5)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32959 32952  "1 "    0     # line from  AIRLQ TP 115.00   (2) to BRKR  POSCO    115.00
1  32959 33037  "1 "    0     # line from  AIRLQ TP 115.00   (2) to (3)   LINDETP2 115.00
1  33037 33038  "1 "    0     # line from  LINDETP2 115.00   (3) to (3)   LINDEJCT 115.00
1  33037 33031  "1 "    0     # line from  LINDETP2 115.00   (3) to (2)   COLSTJT2 115.00
1  33038 32957  "1 "    0     # line from  LINDEJCT 115.00   (3) to BRKR  PRAXAIR  115.00
1  33038 32961  "1 "    0     # line from  LINDEJCT 115.00   (3) to (2)   GWF2 TAP 115.00
1  32961 32960  "1 "    0     # line from  GWF2 TAP 115.00   (2) to (2)   GWF#2 HS 115.00
2  32960 33132  "1 "    0     # TRAN from  GWF#2 HS 115.00   (2) to (1)   GWF #2    13.80
1  33031 33033  "1 "    0     # line from  COLSTJT2 115.00   (2) to (3)   KIRKTAP2 115.00
1  33033 32950  "1 "    0     # line from  KIRKTAP2 115.00   (3) to BRKR  PITSBURG 115.00
1  33033 32951  "1 "    0     # line from  KIRKTAP2 115.00   (3) to BRKR  KIRKER   115.00
4  32957         0  "1 "    0     # LOAD-DROP    PRAXAIR  115.00  LOAD==14.8(3.01)
1  32951 33032  "1"     1       #SWITCH KIRKER TO TAP 1 IF TAP 2 IS LOST
4  32951         0  "1"     1
4  32951         0  "2"     1
4  32951         0  "3"     1
0
#
# (6)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30526 30561  "1 "    0     # line from  PITSBURG 230.00  BRKR to BRKR  TASSAJAR 230.00
0
#
#
# (7)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30525 30560  "1 "    0     # line from  C.COSTA  230.00  BRKR to BRKR  E. SHORE 230.00
0
#
# (8)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33044 33002  "1 "    0     # line from  FIBRBJCT 115.00   (2) to (4)   CROWN Z  115.00
1  33044 33046  "1 "    0     # line from  FIBRBJCT 115.00   (2) to (3)   FIBRJCT2 115.00
1  33002 33003  "1 "    0     # line from  CROWN Z  115.00   (4) to (1)   FIBREBRD 115.00
2  33002 33133  "1 "    0     # TRAN from  CROWN Z  115.00   (4) to (1)   GWF #3    13.80
2  33002 33145  "1 "    0     # TRAN from  CROWN Z  115.00   (4) to (1)   CROWN.Z.  13.80
1  33046 33000  "1 "    0     # line from  FIBRJCT2 115.00   (3) to BRKR  CC SUB   115.00
1  33046 33001  "1 "    0     # line from  FIBRJCT2 115.00   (3) to (1)   DOMTAR   115.00
4  33145         0  "1 "    0     # LOAD-DROP    CROWN.Z.  13.80  LOAD==25(8.22)
4  33001         0  "1 "    0     # LOAD-DROP    DOMTAR   115.00  LOAD==2.4(0.79)
0
#
# (9)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33047 33045  "1 "    0     # line from  CC JCT   115.00   (2) to (1)   FIBRJCT1 115.00
1  33047 33000  "1 "    0     # line from  CC JCT   115.00   (2) to BRKR  CC SUB   115.00
0
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```
#
# (10)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32955 32953  "1 "    0     # line from  DOW TAP2 115.00   (2) to BRKR  CLMBA ST 115.00
1  32955 32952  "1 "    0     # line from  DOW TAP2 115.00   (2) to BRKR  POSCO    115.00
0
#
# (11)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33036 32954  "1 "    0     # line from  LINDETP1 115.00   (2) to (3)   DOW TAP1 115.00
1  33036 33030  "1 "    0     # line from  LINDETP1 115.00   (2) to (2)   COLSTJT1 115.00
1  32954 32953  "1 "    0     # line from  DOW TAP1 115.00   (3) to BRKR  CLMBA ST 115.00
1  32954 32956  "1 "    0     # line from  DOW TAP1 115.00   (3) to (2)   DOW MTR  115.00
1  33030 32950  "1 "    0     # line from  COLSTJT1 115.00   (2) to BRKR  PITSBURG 115.00
2  32956 33160  "1 "    0     # TRAN from  DOW MTR  115.00   (2) to (4)   DOW CHEM  13.80
1  33160 33161  "1 "    0     # line from  DOW CHEM  13.80   (4) to (1)   DOWCHEM1  13.80
1  33160 33162  "1 "    0     # line from  DOW CHEM  13.80   (4) to (1)   DOWCHEM2  13.80
1  33160 33163  "1 "    0     # line from  DOW CHEM  13.80   (4) to (1)   DOWCHEM3  13.80
4  33160         0  "1 "    0     # LOAD-DROP    DOW CHEM  13.80  LOAD==15(9.3)
0
#
# (12)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30435 30540  "1 "    0     # line from  LAKEVILE 230.00  BRKR to BRKR  SOBRANTE 230.00
0
#
# (13)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30437 30540  "1 "    0     # line from  CROCKETT 230.00   (3) to BRKR  SOBRANTE 230.00
1  30437 30438  "1 "    0     # line from  CROCKETT 230.00   (3) to (2)   C&H      230.00
1  30437 30445  "1 "    0     # line from  CROCKETT 230.00   (3) to BRKR  IGNACIO  230.00
2  30438 32900  "1 "    0     # TRAN from  C&H      230.00   (2) to (1)   CRCKTCOG  18.00
0
#
# (14)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30465 30550  "1 "    0     # line from  BAHIA    230.00  BRKR to BRKR  MORAGA   230.00
0
#
# (15)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30470 30525  "1 "    0     # line from  PBDY TPA 230.00   (3) to BRKR  C.COSTA  230.00
1  30470 30460  "1 "    0     # line from  PBDY TPA 230.00   (3) to BRKR  VACA-DIX 230.00
1  30470 30472  "1 "    0     # line from  PBDY TPA 230.00   (3) to BRKR  PEABDY A 230.00
4  30472         0  "3 "    0     # LOAD-DROP    PEABDY A 230.00  LOAD==8.823(-1.791586)
4  30472         0  "2 "    0     # LOAD-DROP    PEABDY A 230.00  LOAD==43.0597(6.135672)
4  30472         0  "1 "    0     # LOAD-DROP    PEABDY A 230.00  LOAD==55.230247(7.86988)
0
#
# (16)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30480 30523  "1 "    0     # line from  USWP-RUS 230.00   (3) to BRKR  CC SUB   230.00
1  30480 30475  "1 "    0     # line from  USWP-RUS 230.00   (3) to (3)   PBDY TPB 230.00
2  30480 32168  "1 "    0     # TRAN from  USWP-RUS 230.00   (3) to (1)   USWINDPW   9.11
1  30475 30460  "1 "    0     # line from  PBDY TPB 230.00   (3) to BRKR  VACA-DIX 230.00
1  30475 30477  "1 "    0     # line from  PBDY TPB 230.00   (3) to (1)   PEABDY B 230.00
0
#
# (17)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30523 30525  "1 "    0     # line from  CC SUB   230.00  BRKR to BRKR  C.COSTA  230.00
0
#
# (18)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30525 30565  "1 "    0     # line from  C.COSTA  230.00  BRKR to BRKR  BRENTWOD 230.00
0
#
# (19)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30525 30575  "1 "    0     # line from  C.COSTA  230.00  BRKR to (3)   WND MSTR 230.00
1  30575 38610  "1 "    0     # line from  WND MSTR 230.00   (3) to BRKR  DELTAPMP 230.00
2  30575 33170  "1 "    0     # TRAN from  WND MSTR 230.00   (3) to (1)   WINDMSTR   9.11
0
#
# (20)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
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#
1  30525 30585  "1 "    0     # line from  C.COSTA  230.00  BRKR to BRKR  LS PSTAS 230.00
0
#
# (21)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30525 30590  "1 "    0     # line from  C.COSTA  230.00  BRKR to (3)   USWP-JRW 230.00
1  30590 30630  "1 "    0     # line from  USWP-JRW 230.00   (3) to BRKR  NEWARK D 230.00
2  30590 33838  "1 "    0     # TRAN from  USWP-JRW 230.00   (3) to (1)   USWP_#3    9.11
0
#
# (22)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30526 30535  "1 "    0     # line from  PITSBURG 230.00  BRKR to BRKR  TIDEWATR 230.00
0
#
# (23)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30526 30540  "1 "    0     # line from  PITSBURG 230.00  BRKR to BRKR  SOBRANTE 230.00
0
#
# (24)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30526 30545  "1 "    0     # line from  PITSBURG 230.00  BRKR to BRKR  ROSSMOOR 230.00
0
#
# (25)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30526 30549  "1 "    0     # line from  PITSBURG 230.00  BRKR to BRKR  ROBLES   230.00
0
#
# (26)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30526 30555  "1 "    0     # line from  PITSBURG 230.00  BRKR to BRKR  SANRAMON 230.00
0
#
# (27)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30526 30595  "1 "    0     # line from  PITSBURG 230.00  BRKR to (3)   FLOWIND2 230.00
1  30595 30625  "1 "    0     # line from  FLOWIND2 230.00   (3) to BRKR  TESLA D  230.00
2  30595 33840  "1 "    0     # TRAN from  FLOWIND2 230.00   (3) to (1)   FLOWD3-6   9.11
0
#
# (28)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30526 30600  "1 "    0     # line from  PITSBURG 230.00  BRKR to (3)   JV ENTER 230.00
1  30600 30625  "1 "    0     # line from  JV ENTER 230.00   (3) to BRKR  TESLA D  230.00
2  30600 33171  "1 "    0     # TRAN from  JV ENTER 230.00   (3) to (1)   JVE&HOWD   9.11
0
#
# (29)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30535 30540  "1 "    0     # line from  TIDEWATR 230.00  BRKR to BRKR  SOBRANTE 230.00
0
#
# (30)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30545 30550  "1 "    0     # line from  ROSSMOOR 230.00  BRKR to BRKR  MORAGA   230.00
0
#
# (31)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30550 30554  "1 "    0     # line from  MORAGA   230.00  BRKR to BRKR  CASTROVL 230.00
0
#
# (32)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30550 30555  "1 "    0     # line from  MORAGA   230.00  BRKR to BRKR  SANRAMON 230.00
0
#
# (33)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30565 30569  "1 "    0     # line from  BRENTWOD 230.00  BRKR to BRKR  KELSO    230.00
0
#
# (34)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
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#
1  30569 30570  "1 "    0     # line from  KELSO    230.00  BRKR to (4)   USWP-RLF 230.00
1  30570 30571  "1 "    0     # line from  USWP-RLF 230.00   (4) to (2)   ALTALAND 230.00
1  30570 30625  "1 "    0     # line from  USWP-RLF 230.00   (4) to BRKR  TESLA D  230.00
2  30570 33836  "1 "    0     # TRAN from  USWP-RLF 230.00   (4) to (1)   USWP_#4    9.11
2  30571 33832  "1 "    0     # TRAN from  ALTALAND 230.00   (2) to (1)   COG.CAPT   9.11
0
#
# (35)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30580 30625  "1 "    0     # line from  ALTM MDW 230.00   (3) to BRKR  TESLA D  230.00
1  30580 38610  "1 "    0     # line from  ALTM MDW 230.00   (3) to BRKR  DELTAPMP 230.00
2  30580 33175  "1 "    0     # TRAN from  ALTM MDW 230.00   (3) to (1)   ALTAMONT   9.11
0
#
# (36)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32754 32990  "1 "    0     # line from  OLEUM    115.00  BRKR to BRKR  MARTNZ D 115.00
0
#
# (37)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32756 33010  "1 "    0     # line from  CHRISTIE 115.00  BRKR to BRKR  SOBRANTE 115.00
0
#
# (38)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30549 30550  "1 "    0     # line from  ROBLES   230.00  BRKR to BRKR  MORAGA   230.00
0
#
# (39)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32766 33010  "1 "    0     # line from  EL CRRTO 115.00  BRKR to BRKR  SOBRANTE 115.00
0
#
# (40)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32766 33010  "2 "    0     # line from  EL CRRTO 115.00  BRKR to BRKR  SOBRANTE 115.00
0
#
# (41)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32768 33010  "1 "    0     # line from  RICHMOND 115.00  BRKR to BRKR  SOBRANTE 115.00
0
#
# (42)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32768 33010  "2 "    0     # line from  RICHMOND 115.00  BRKR to BRKR  SOBRANTE 115.00
0
#
# (43)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32770 32772  "1 "    0     # line from  GRIZZLY2 115.00  BRKR to (3)   GRIZLYJ1 115.00
1  32772 33010  "1 "    0     # line from  GRIZLYJ1 115.00   (3) to BRKR  SOBRANTE 115.00
1  32772 33012  "1 "    0     # line from  GRIZLYJ1 115.00   (3) to (2)   EST PRTL 115.00
1  33012 32780  "1 "    0     # line from  EST PRTL 115.00   (2) to BRKR  CLAREMNT 115.00
4  33012         0  "1 "    0     # LOAD-DROP    EST PRTL 115.00  LOAD==8(4.96)
0
#
# (44)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32770 32776  "2 "    0     # line from  GRIZZLY2 115.00  BRKR to (3)   GRIZLYJ2 115.00
1  32776 32780  "1 "    0     # line from  GRIZLYJ2 115.00   (3) to BRKR  CLAREMNT 115.00
1  32776 33010  "1 "    0     # line from  GRIZLYJ2 115.00   (3) to BRKR  SOBRANTE 115.00
0
#
# (45)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32774 33010  "1 "    0     # line from  PTPNLTAP 115.00   (3) to BRKR  SOBRANTE 115.00
1  32774 32760  "1 "    0     # line from  PTPNLTAP 115.00   (3) to (1)   PT PINLE 115.00
1  32774 32762  "1 "    0     # line from  PTPNLTAP 115.00   (3) to BRKR  STD. OIL 115.00
4  32760         0  "1 "    0     # LOAD-DROP    PT PINLE 115.00  LOAD==17.831501(1.1305)
0
#
# (46)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
```

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1  32852 33067  "1 "    0     # line from  CHRISTIE  60.00  BRKR to (3)   PCBRICK   60.00
1  33067 32854  "1 "    0     # line from  PCBRICK   60.00   (3) to (1)   PRT CSTA  60.00
1  33067 33066  "1 "    0     # line from  PCBRICK   60.00   (3) to (3)   STAUFFER  60.00
1  33066 33065  "1 "    0     # line from  STAUFFER  60.00   (3) to (2)   URICH     60.00
2  33066 33139  "1 "    0     # TRAN from  STAUFFER  60.00   (3) to (1)   STAUFER    9.11
1  33065 33064  "1 "    0     # line from  URICH     60.00   (2) to (2)   SFPP CNC  60.00
1  33064 33091  "1 "    0     # line from  SFPP CNC  60.00   (2) to (2)   TAP GWF5  60.00
2  33091 33135  "1 "    0     # TRAN from  TAP GWF5  60.00   (2) to (1)   GWF #5    13.80
4  32854         0  "1 "    0     # LOAD-DROP    PRT CSTA  60.00  LOAD==1.14(0.9785)
4  33065         0  "1 "    0     # LOAD-DROP    URICH     60.00  LOAD==2.2(1.65)
4  33139         0  "1 "    0     # LOAD-DROP    STAUFER    9.11  LOAD==3.6(0.82)
4  33064         0  "1 "    0     # LOAD-DROP    SFPP CNC  60.00  LOAD==12.8(7.6)
0
#
# (47)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32950 32970  "1 "    0     # line from  PITSBURG 115.00  BRKR to BRKR  CLAYTON  115.00
0
#
# (48)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32950 32992  "1 "    0     # line from  PITSBURG 115.00  BRKR to (2)   BOLLMAN2 115.00
1  32992 33043  "1 "    0     # line from  BOLLMAN2 115.00   (2) to (2)   IMHOFF_2 115.00
1  33043 32991  "1 "    0     # line from  IMHOFF_2 115.00   (2) to BRKR  MARTNZ E 115.00
4  32992 33040  "1 "    1     # LOAD-TRANSFER  BOLLMAN2 115.00  TO  BOLLMAN1 115.00
LOAD==8.9(5.28)
0
#
# (49)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32950 32993  "1 "    0     # line from  PITSBURG 115.00  BRKR to (2)   W.P.BART 115.00
1  32993 33040  "1 "    0     # line from  W.P.BART 115.00   (2) to (2)   BOLLMAN1 115.00
1  33040 33042  "1 "    0     # line from  BOLLMAN1 115.00   (2) to (3)   IMHOFF_1 115.00
1  33042 32991  "1 "    0     # line from  IMHOFF_1 115.00   (3) to BRKR  MARTNZ E 115.00
2  33042 33136  "1 "    0     # TRAN from  IMHOFF_1 115.00   (3) to (1)   CCCSD     12.47
4  32993         0  "1 "    0     # LOAD-DROP    W.P.BART 115.00  LOAD==12(1.71)
4  33136         0  "1 "    0     # LOAD-DROP    CCCSD     12.47  LOAD==4(0.91)
0
#
# (50)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32950 33032  "1 "    0     # line from  PITSBURG 115.00  BRKR to (2)   KIRKTAP1 115.00
1  33032 32970  "1 "    0     # line from  KIRKTAP1 115.00   (2) to BRKR  CLAYTON  115.00
0
#
# (51)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32970 32971  "1 "    0     # line from  CLAYTON  115.00  BRKR to BRKR  MEDW LNE 115.00
0
#
# (52)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32970 33035  "1 "    0     # line from  CLAYTON  115.00  BRKR to (3)   LKWD_JCT 115.00
1  33035 32972  "1 "    0     # line from  LKWD_JCT 115.00   (3) to (2)   EBMUDGRY 115.00
1  33035 32973  "1 "    0     # line from  LKWD_JCT 115.00   (3) to BRKR  LAKEWD-C 115.00
1  32972 32971  "1 "    0     # line from  EBMUDGRY 115.00   (2) to BRKR  MEDW LNE 115.00
4  32972         0  "1 "    0     # LOAD-DROP    EBMUDGRY 115.00  LOAD==0.3(0.15)
0
#
# (53)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32974 32973  "1 "    0     # line from  LAKEWD-M 115.00  BRKR to BRKR  LAKEWD-C 115.00
0
#
# (54)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32974 32975  "1 "    0     # line from  LAKEWD-M 115.00  BRKR to (1)   LKWDBART 115.00
4  32975         0  "1 "    0     # LOAD-DROP    LKWDBART 115.00  LOAD==7.2(1.03)
0
#
# (55)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32974 32976  "5 "    0     # line from  LAKEWD-M 115.00  BRKR to (2)   LK_REACT 115.00
1  32976 33048  "1 "    0     # line from  LK_REACT 115.00   (2) to (3)   MORAGAJT 115.00
1  33048 33010  "1 "    0     # line from  MORAGAJT 115.00   (3) to BRKR  SOBRANTE 115.00
1  33048 33020  "1 "    0     # line from  MORAGAJT 115.00   (3) to BRKR  MORAGA   115.00
```

```
0
#
# (56)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32990 33011  "1 "    0     # line from  MARTNZ D 115.00  BRKR to (2)   ALHAMBRA 115.00
1  33011 33010  "1 "    0     # line from  ALHAMBRA 115.00   (2) to BRKR  SOBRANTE 115.00
4  33011         0  "1 "    0     # LOAD-DROP    ALHAMBRA 115.00  LOAD==21.4(4)
0
#
# (57)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32991 32990  "1 "    0     # line from  MARTNZ E 115.00  BRKR to BRKR  MARTNZ D 115.00
0
#
# (58)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 32780  "1 "    0     # line from  MORAGA   115.00  BRKR to BRKR  CLAREMNT 115.00
0
#
# (59)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 32780  "2 "    0     # line from  MORAGA   115.00  BRKR to BRKR  CLAREMNT 115.00
0
#
# (60)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 32790  "1 "    0     # line from  MORAGA   115.00  BRKR to BRKR  STATIN X 115.00
0
#
# (61)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 32790  "2 "    0     # line from  MORAGA   115.00  BRKR to BRKR  STATIN X 115.00
0
#
# (62)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 32790  "3 "    0     # line from  MORAGA   115.00  BRKR to BRKR  STATIN X 115.00
0
#
# (63)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 32790  "4 "    0     # line from  MORAGA   115.00  BRKR to BRKR  STATIN X 115.00
0
#
# (64)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 32792  "1 "    0     # line from  MORAGA   115.00  BRKR to BRKR  STATIN J 115.00
0
#
# (65)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 35101  "1 "    0     # line from  MORAGA   115.00  BRKR to BRKR  SN LNDRO 115.00
0
#
# (66)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 35101  "2 "    0     # line from  MORAGA   115.00  BRKR to BRKR  SN LNDRO 115.00
0
#
# (67)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33020 35101  "3 "    0     # line from  MORAGA   115.00  BRKR to BRKR  SN LNDRO 115.00
0
#
# (68)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32786 32904  "1 "    0     # line from  OAK C115 115.00  BRKR to BRKR  OADLND23 115.00
0
#
#  (69)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32602 32778  "1 "    0     # line from  NRTH TWR 115.00  BRKR to (3)   NTWRJCT2 115.00
1  32778 32754  "1 "    0     # line from  NTWRJCT2 115.00   (3) to BRKR  OLEUM    115.00
1  32778 32756  "1 "    0     # line from  NTWRJCT2 115.00   (3) to BRKR  CHRISTIE 115.00
4  32602         0  "1 "    0     # LOAD-DROP    NRTH TWR 115.00  LOAD==29.86845(4.256021)
0
```

```
#
# (70)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32752 32766  "1 "    0     # line from  E.C.BART 115.00   (1) to BRKR  EL CRRTO 115.00
4  32752         0  "1 "    0     # LOAD-DROP    E.C.BART 115.00  LOAD==7.56(4.685266)
0
#
# (71)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32754 32764  "1 "    0     # line from  OLEUM    115.00  BRKR to (2)   VALLY VW 115.00
1  32764 32766  "1 "    0     # line from  VALLY VW 115.00   (2) to BRKR  EL CRRTO 115.00
4  32764 32766  "1 "    1     # LOAD-TRANSFER  VALLY VW 115.00  TO  EL CRRTO 115.00
LOAD==18.260151(1.156602)
0
#
# (72)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32754 32766  "1 "    0     # line from  OLEUM    115.00  BRKR to BRKR  EL CRRTO 115.00
0
#
# (73)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32754 32990  "1 "    0     # line from  OLEUM    115.00  BRKR to BRKR  MARTNZ D 115.00
0
#
# (74)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32756 33010  "1 "    0     # line from  CHRISTIE 115.00  BRKR to BRKR  SOBRANTE 115.00
0
#
# (75)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32758 32762  "1 "    0     # line from  SAN PBLO 115.00   (2) to BRKR  STD. OIL 115.00
1  32758 33010  "1 "    0     # line from  SAN PBLO 115.00   (2) to BRKR  SOBRANTE 115.00
4  32758 33010  "1 "    1     # LOAD-TRANSFER  SAN PBLO 115.00  TO  SOBRANTE 115.00
LOAD==15.42295(0.690249)
0
#
# (76)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32760 32774  "1 "    0     # line from  PT PINLE 115.00   (1) to (3)   PTPNLTAP 115.00
1  32774 32762  "1 "    0     # line from  PTPNLTAP 115.00   (3) to BRKR  STD. OIL 115.00
1  32774 33010  "1 "    0     # line from  PTPNLTAP 115.00   (3) to BRKR  SOBRANTE 115.00
4  32760         0  "1 "    0     # LOAD-DROP    PT PINLE 115.00  LOAD==15.42295(0.976893)
0
#
# (77)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32780 32782  "1 "    0     # line from  CLAREMNT 115.00  BRKR to BRKR  STATIN D 115.00
0
#
# (78)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32780 32782  "2 "    0     # line from  CLAREMNT 115.00  BRKR to BRKR  STATIN D 115.00
0
#
# (79)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32782 32788  "1 "    0     # line from  STATIN D 115.00  BRKR to BRKR  STATIN L 115.00
0
#
# (80)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32786 32788  "1 "    0     # line from  OAK C115 115.00  BRKR to BRKR  STATIN L 115.00
0
#
# (81)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32786 32790  "1 "    0     # line from  OAK C115 115.00  BRKR to BRKR  STATIN X 115.00
0
#
# (82)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32786 32794  "1 "    0     # line from  OAK C115 115.00  BRKR to (1)   MARITIME 115.00
4  32794         0  "1 "    0     # LOAD-DROP    MARITIME 115.00
LOAD==19.700001(12.208962)
```

```
0
#
# (83)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32786 38022  "1 "    0     # line from  OAK C115 115.00  BRKR to BRKR  ALAMDA C 115.00
0
#
# (84)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32792 32798  "1 "    0     # line from  STATIN J 115.00  BRKR to (3)   OWENSTAP 115.00
1  32798 32800  "1 "    0     # line from  OWENSTAP 115.00   (3) to (1)   OWNBRKWY 115.00
1  32798 35103  "1 "    0     # line from  OWENSTAP 115.00   (3) to (2)   EDS GRNT 115.00
1  35103 35104  "1 "    0     # line from  EDS GRNT 115.00   (2) to BRKR  GRANT    115.00
4  32800         0  "1 "    0     # LOAD-DROP    OWNBRKWY 115.00  LOAD==10.8(5.533005)
0
#
# (85)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32792 35102  "1 "    0     # line from  STATIN J 115.00  BRKR to (2)   EDES     115.00
1  35102 35113  "1 "    0     # line from  EDES     115.00   (2) to (2)   DMTAR_SL 115.00
1  35113 35101  "1 "    0     # line from  DMTAR_SL 115.00   (2) to BRKR  SN LNDRO 115.00
4  35102 35103  "1 "    1     # LOAD-TRANSFER  EDES     115.00  TO  EDS GRNT 115.00
LOAD==46.908951(0)
4  35113         0  "1 "    0     # LOAD-DROP    DMTAR_SL 115.00  LOAD==2.66(1.64852)
0
#
# (86)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  32792 38024  "1 "    0     # line from  STATIN J 115.00  BRKR to BRKR  ALAMDA J 115.00
4  38024         0  "1 "    0     # LOAD-DROP    ALAMDA J 115.00
LOAD==27.440001(6.877109)
1  38024 38022  "1 "    1     # LOAD-TRANSFER ALAMDA J to ALAMDA C
4  38024         0  "1"     1     # RESTORE ALAMDA J load
0
#
# (87)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33012 32780  "1 "    0     # line from  EST PRTL 115.00  BRKR to BRKR  CLAREMNT 115.00
0
# (88)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30585 30630  "1 "    0     # line from  LS PSTAS 230.00  BRKR to BRKR  NEWARK D 230.00
0
# (89)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30560 30700  "1 "    0     # line from  E. SHORE 230.00  BRKR to BRKR  SANMATEO 230.00
0
# (90)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30554 30631  "1 "    0     # line from  CASTROVL 230.00  BRKR to BRKR  NEWARK E 230.00
0
#
# (91)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30624 30630  "1 "    0     # line from  TESLA E  230.00  BRKR to BRKR  NEWARK D 230.00
0
#
# (92)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30624 30703  "1 "    0     # line from  TESLA E  230.00  BRKR to BRKR  RAVENSWD 230.00
0
#
# (93)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30630 30700  "1 "    0     # line from  NEWARK D 230.00  BRKR to BRKR  SANMATEO 230.00
0
#
# (94)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30631 30735  "1 "    0     # line from  NEWARK E 230.00  BRKR to BRKR  METCALF  230.00
0
#
# (95)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30631 30735  "2 "    0     # line from  NEWARK E 230.00  BRKR to BRKR  METCALF  230.00
0
```

```
#
# (96)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30624 30655  "1 "    0     # line from  TESLA E  230.00  BRKR to (2)   ADCC     230.00
2  30655 35310  "1 "    0     # TRAN from  ADCC     230.00   (2) to (1)   LFC FIN-   9.11
0
#
# (97)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35107 35120  "1 "    0     # line from  DUMBARTN 115.00  BRKR to BRKR  NEWARK D 115.00
0
#
# (98)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35105 35107  "1 "    0     # line from  EASTSHRE 115.00  BRKR to BRKR  DUMBARTN 115.00
0
#
# (99)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35104 35105  "1 "    0     # line from  GRANT    115.00  BRKR to BRKR  EASTSHRE 115.00
0
#
# (100)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35105 35106  "1 "    0     # line from  EASTSHRE 115.00  BRKR to BRKR  MT EDEN  115.00
0
#
# (101)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35105 35106  "2 "    0     # line from  EASTSHRE 115.00  BRKR to BRKR  MT EDEN  115.00
0
#
# (102)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35103 35104  "1 "    0     # line from  EDS GRNT 115.00   (2) to BRKR  GRANT    115.00
1  35103 32798  "1 "    0     # line from  EDS GRNT 115.00   (2) to (3)   OWENSTAP 115.00
1  32798 32792  "1 "    0     # line from  OWENSTAP 115.00   (3) to BRKR  STATIN J 115.00
1  32798 32800  "1 "    0     # line from  OWENSTAP 115.00   (3) to (1)   OWNBRKWY 115.00
4  32800         0  "1 "    0     # LOAD-DROP    OWNBRKWY 115.00  LOAD==10.8(5.533005)
0
#
# (103)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35101 35113  "1 "    0     # line from  SN LNDRO 115.00  BRKR to (2)   DMTAR_SL 115.00
1  35113 35102  "1 "    0     # line from  DMTAR_SL 115.00   (2) to (2)   EDES     115.00
1  35102 32792  "1 "    0     # line from  EDES     115.00   (2) to BRKR  STATIN J 115.00
4  35113         0  "1 "    0     # LOAD-DROP    DMTAR_SL 115.00  LOAD==2.66(1.64852)
4  35102 35103  "1 "    1     # LOAD-TRANSFER  EDES     115.00  TO  EDS GRNT 115.00
LOAD==54.23(0)
0
#
# (104)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35121 35110  "1 "    0     # line from  NEWARK E 115.00  BRKR to BRKR  FREMNT   115.00
0
#
# (105)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35121 35110  "2 "    0     # line from  NEWARK E 115.00  BRKR to BRKR  FREMNT   115.00
0
#
# (106)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35120 35111  "1 "    0     # line from  NEWARK D 115.00  BRKR to BRKR  JARVIS   115.00
0
#
# (107)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35120 35111  "2 "    0     # line from  NEWARK D 115.00  BRKR to BRKR  JARVIS   115.00
0
#
# (108)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 35112  "1 "    0     # line from  NEWARK F 115.00  BRKR to (1)   NUMMI    115.00
4  35112 35111  "1 "    1     # LOAD-TRANSFER  NUMMI    115.00  TO  JARVIS   115.00
LOAD==33.25(24.937498)
```

```
0
#
# Lines to Adjacent Areas
#
# (109)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30630 35709  "2 "    0     # line from  NEWARK D 230.00  BRKR to BRKR  LS_ESTRS 230.00
0
#
# (110)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30630 35709  "1 "    0     # line from  NEWARK D 230.00  BRKR to BRKR  LS_ESTRS 230.00
0
#
# (111)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35121 35350  "1 "    0     # line from  NEWARK E 115.00  BRKR to BRKR  AMES BS1 115.00
0
#
# (112)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35121 35350  "2 "    0     # line from  NEWARK E 115.00  BRKR to BRKR  AMES BS1 115.00
0
#
# (113)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35121 35351  "1 "    0     # line from  NEWARK E 115.00  BRKR to BRKR  AMES BS2 115.00
0
#
# (114)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35121 35351  "2 "    0     # line from  NEWARK E 115.00  BRKR to BRKR  AMES BS2 115.00
0
#
# (115)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 35357  "1 "    0     # line from  NEWARK F 115.00  BRKR to (3)   LCKHD J1 115.00
1  35357 35358  "1 "    0     # line from  LCKHD J1 115.00   (3) to (3)   MFT.FD J 115.00
1  35357 35363  "1 "    0     # line from  LCKHD J1 115.00   (3) to BRKR  LAWRENCE 115.00
1  35358 35359  "1 "    0     # line from  MFT.FD J 115.00   (3) to (1)   MOFT.FLD 115.00
1  35358 35361  "1 "    0     # line from  MFT.FD J 115.00   (3) to BRKR  LOCKHD 1 115.00
4  35359         0  "1 "    0     # LOAD-DROP    MOFT.FLD 115.00  LOAD==4.4772(1.02459)
4  35361         0  "1 "    0     # LOAD-DROP    LOCKHD 1 115.00  LOAD==23.5914(5.37264)
0
#
# (116)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 35360  "1 "    0     # line from  NEWARK F 115.00  BRKR to (3)   LCKHD J2 115.00
1  35360 35362  "1 "    0     # line from  LCKHD J2 115.00   (3) to (1)   LOCKHD 2 115.00
1  35360 35365  "1 "    0     # line from  LCKHD J2 115.00   (3) to (3)   AMD JCT  115.00
1  35365 35369  "1 "    0     # line from  AMD JCT  115.00   (3) to (2)   APP MAT  115.00
1  35365 35364  "1 "    0     # line from  AMD JCT  115.00   (3) to (1)   A.M.D    115.00
1  35369 35368  "1 "    0     # line from  APP MAT  115.00   (2) to BRKR  BRITTON  115.00
4  35362         0  "1 "    0     # LOAD-DROP    LOCKHD 2 115.00  LOAD==12.4845(2.8413)
4  35369         0  "1 "    0     # LOAD-DROP    APP MAT  115.00  LOAD==25.83(5.88924)
4  35364         0  "1 "    0     # LOAD-DROP    A.M.D    115.00  LOAD==6.8019(4.3911)
0
#
# (117)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 35600  "1 "    0     # line from  NEWARK F 115.00  BRKR to BRKR  DIXON LD 115.00
0
#
# (118)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 35601  "1 "    0     # line from  NEWARK F 115.00  BRKR to (2)   DIXON J1 115.00
1  35601 35624  "1 "    0     # line from  DIXON J1 115.00   (2) to BRKR  MILPITAS 115.00
0
#
# (119)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 35602  "1 "    0     # line from  NEWARK F 115.00  BRKR to (3)   ZNKER J2 115.00
1  35602 35604  "1 "    0     # line from  ZNKER J2 115.00   (3) to (2)   ZANKER   115.00
1  35602 36850  "1 "    0     # line from  ZNKER J2 115.00   (3) to BRKR  KIFER    115.00
1  35604 35605  "1 "    1     # switch line from ZANKER 115.00 to AGNEW J 115.00
0
```

```
#
# (120)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 35603  "1 "    0     # line from  NEWARK F 115.00  BRKR to (3)   ZNKER J1 115.00
1  35603 35605  "1 "    0     # line from  ZNKER J1 115.00   (3) to (1)   AGNEW J  115.00
1  35603 35612  "1 "    0     # line from  ZNKER J1 115.00   (3) to BRKR  TRIMBLE  115.00
1  35604 35605  "1 "    1     # switch line from ZANKER 115.00 to AGNEW J 115.00
0
#
# (121)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 35624  "1 "    0     # line from  NEWARK F 115.00  BRKR to BRKR  MILPITAS 115.00
0
#
# (122)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35120 36852  "1 "    0     # line from  NEWARK D 115.00  BRKR to BRKR  SCOTT    115.00
0
#
# (123)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35122 36852  "2 "    0     # line from  NEWARK F 115.00  BRKR to BRKR  SCOTT    115.00
0
#
# (124)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35120 36960  "1 "    0     # line from  NEWARK D 115.00  BRKR to (6)   OAKDLTID 115.00
1  36960 36962  "1 "    0     # line from  OAKDLTID 115.00   (6) to BRKR  MOCCASIN 115.00
1  36960 38420  "1 "    0     # line from  OAKDLTID 115.00   (6) to BRKR  TUOLUMN  115.00
0
#
# (125)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  36960 35120  "2 "    0     # line from  OAKDLTID 115.00   (6) to BRKR  NEWARK D 115.00
1  36960 36962  "2 "    0     # line from  OAKDLTID 115.00   (6) to BRKR  MOCCASIN 115.00
1  36960 38420  "2 "    0     # line from  OAKDLTID 115.00   (6) to BRKR  TUOLUMN  115.00
0
#
#  ***************************************************************************
#
# (126)  B1 GENERATOR OUTAGE  -- Contra Costa Unit 6
#
3  33116     0  "1"    0     # C.COS 6   18.00       PGEN=320.00  QGEN=168.31
0
# (127)  B1 GENERATOR OUTAGE   --  Pittsburg Unit 7
#
3  30000     0  "1"    0     # PTS7SWNG  20.00       PGEN=650.00  QGEN=350.00
0
#
# (128)  B1 GENERATOR OUTAGE   --  Potrero Unit 3
#
3  33252     0  "1"    0     # POTRERO3  20.00       PGEN=205.00  QGEN=64.00
0
#
#  ***************************************************************************
#   Transformer Outages
#
# (129)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  30550 30551  "1 "    0     # TRAN from  MORAGA   230.00  BRKR to (3)   MRAGA 1M 230.00
2  30551 33020  "1 "    0     # TRAN from  MRAGA 1M 230.00   (3) to BRKR  MORAGA   115.00
2  30551 33121  "1 "    0     # TRAN from  MRAGA 1M 230.00   (3) to (1)   MRAGA 1T  13.20
0
#
# (130)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  32950 30526  "1 "    0     # TRAN from  PITSBURG 115.00  BRKR to BRKR  PITSBURG 230.00
0
#
# (131)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  32950 30526  "2 "    0     # TRAN from  PITSBURG 115.00  BRKR to BRKR  PITSBURG 230.00
0
#
# (132)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
```

```
2  33000 30523  "1 "    0     # TRAN from  CC SUB   115.00  BRKR to BRKR  CC SUB   230.00
0
#
# (133)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  33010 30540  "1 "    0     # TRAN from  SOBRANTE 115.00  BRKR to BRKR  SOBRANTE 230.00
0
#
# (134)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  33010 30540  "2 "    0     # TRAN from  SOBRANTE 115.00  BRKR to BRKR  SOBRANTE 230.00
0
#
# (135)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  33050 33000  "1 "    0     # TRAN from  CC SUB    60.00  BRKR to BRKR  CC SUB   115.00
0
#
# (136)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  35105 30560  "1 "    0     # TRAN from  EASTSHRE 115.00  BRKR to BRKR  E. SHORE 230.00
0
#
# (137)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#      **** 3-WINDING TRANSFORMER  30631  (30628)  35122  35300 :
2  30631 35122  "11"    0     # TRAN from  NEWARK E 230.00  BRKR to (1)   NEWARK F 115.00
0
#
# (138)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#      **** 3-WINDING TRANSFORMER  30630  (30627)  35120  35301 :
2  30630 35120  "9 "    0     # TRAN from  NEWARK D 230.00  BRKR to (1)   NEWARK D 115.00
0
#
# (139)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
#      **** 3-WINDING TRANSFORMER  30630  (30626)  35121  35303 :
2  30630 35121  "7 "    0     # TRAN from  NEWARK D 230.00  BRKR to (1)   NEWARK E 115.00
0
#
# (140)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  35120 35109  "1 "    0     # TRAN from  NEWARK D 115.00  BRKR to (3)   NWRK 2 M 115.00
2  35109 35217  "1 "    0     # TRAN from  NWRK 2 M 115.00   (3) to BRKR  NEWARK    60.00
2  35109 35302  "1 "    0     # TRAN from  NWRK 2 M 115.00   (3) to (1)   NWRK 2 T  13.00
0
#
# (141)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  35209 30555  "1 "    0     # TRAN from  SAN RAMN  60.00  BRKR to BRKR  SANRAMON 230.00
0
#
# (142)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
#
2  35220 30585  "1 "    0     # TRAN from  LPOSTAS   60.00  BRKR to BRKR  LS PSTAS 230.00
0
#
#   ***************************************************************************
#
#   South Bay Contingencies
#
#   ***************************************************************************
#
# (143)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33309 33307  "1 "    0     # line from  SANPAULA 115.00   (2) to BRKR  MILLBRAE 115.00
1  33309 33208  "1 "    0     # line from  SANPAULA 115.00   (2) to BRKR  MARTIN C 115.00
4  33309 33305  "1 "    0     # LOAD-TRANSFER  SANPAULA 115.00  TO  SHAWROAD 115.00
LOAD==5.5(2.66)
0
#
# (144)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33308 33303  "1 "    0     # line from  MIL-SFIA 115.00   (2) to BRKR  EST GRND 115.00
1  33308 33310  "1 "    0     # line from  MIL-SFIA 115.00   (2) to BRKR  SANMATEO 115.00
4  33308 33306  "1 "    0     # LOAD-TRANSFER  MIL-SFIA 115.00  TO  AIRPORT  115.00
LOAD==27.139999(18.940001)
```

```
0
#
# (145)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33310 33305  "1 "    0     # line from  SANMATEO 115.00  BRKR to (2)   SHAWROAD 115.00
1  33305 33208  "1 "    0     # line from  SHAWROAD 115.00   (2) to BRKR  MARTIN C 115.00
4  33305 33309  "1 "    0     # LOAD-TRANSFER  SHAWROAD 115.00  TO  SANPAULA 115.00
LOAD==13(6.3)
0
#
# (146)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30696 30699  "1 "    0     # line from  MRTN  RT 230.00   (2) to (2)   SN. M RT 230.00
1  30696 30695  "1 "    0     # line from  MRTN  RT 230.00   (2) to BRKR  MARTIN C 230.00
1  30699 30700  "1 "    0     # line from  SN. M RT 230.00   (2) to BRKR  SANMATEO 230.00
0
#
# (147)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33208 33310  "2 "    0     # line from  MARTIN C 115.00  BRKR to BRKR  SANMATEO 115.00
0
#
# (148)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30700 30703  "1 "    0     # line from  SANMATEO 230.00  BRKR to BRKR  RAVENSWD 230.00
0
#
# (149)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30705 30715  "1 "    0     # line from  MONTAVIS 230.00  BRKR to BRKR  JEFFERSN 230.00
0
#
# (150)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33208 33300  "1 "    0     # line from  MARTIN C 115.00  BRKR to BRKR  DALY CTY 115.00
0
#
# (151)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33208 33301  "1 "    0     # line from  MARTIN C 115.00  BRKR to (3)   DLY CTYP 115.00
1  33301 33300  "1 "    0     # line from  DLY CTYP 115.00   (3) to BRKR  DALY CTY 115.00
1  33301 33302  "1 "    0     # line from  DLY CTYP 115.00   (3) to BRKR  SERRMNTE 115.00
0
#
# (152)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33208 33303  "1 "    0     # line from  MARTIN C 115.00  BRKR to BRKR  EST GRND 115.00
0
#
# (153)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33208 33304  "1 "    0     # line from  MARTIN C 115.00  BRKR to (3)   UAL COGN 115.00
1  33304 33306  "1 "    0     # line from  UAL COGN 115.00   (3) to BRKR  AIRPORT  115.00
2  33304 33466  "1 "    0     # TRAN from  UAL COGN 115.00  BRKR to (1)   UNTED CO   9.11
0
#
# (154)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33208 33310  "2 "    0     # line from  MARTIN C 115.00  BRKR to BRKR  SANMATEO 115.00
0
#
# (155)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33306 33310  "1 "    0     # line from  AIRPORT  115.00  BRKR to BRKR  SANMATEO 115.00
0
#
# (156)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33307 33310  "1 "    0     # line from  MILLBRAE 115.00  BRKR to BRKR  SANMATEO 115.00
0
#
# (157)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33310 33311  "1 "    0     # line from  SANMATEO 115.00  BRKR to BRKR  BAY MDWS 115.00
0
#
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# (158)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33310 33311  "2 "    0     # line from  SANMATEO 115.00  BRKR to BRKR  BAY MDWS 115.00
0
#
# (159)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33310 33312  "1 "    0     # line from  SANMATEO 115.00  BRKR to BRKR  BELMONT  115.00
0
#
# (160)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33310 33315  "1 "    0     # line from  SANMATEO 115.00  BRKR to BRKR  RAVENSWD 115.00
0
#
# (161)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33312 33313  "1 "    0     # line from  BELMONT  115.00  BRKR to BRKR  BAIR     115.00
0
#
# (162)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33313 33315  "1 "    0     # line from  BAIR     115.00  BRKR to BRKR  RAVENSWD 115.00
4  33314     0  "1 "    0     # LOAD-DROP    SHREDDER 115.00  LOAD==3.06(0.7)
0
#
# (163)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33315 33316  "1 "    0     # line from  RAVENSWD 115.00  BRKR to BRKR  CLY LNDG 115.00
0
#
# (164)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33315 33317  "2 "    0     # line from  RAVENSWD 115.00  BRKR to BRKR  CLY LNG2 115.00
0
#
# (165)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33315 35350  "1 "    0     # line from  RAVENSWD 115.00  BRKR to BRKR  AMES BS1 115.00
0
#
# (166)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33315 38028  "1 "    0     # line from  RAVENSWD 115.00  BRKR to BRKR  PLO ALTO 115.00
0
#
# (167)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33315 38028  "2 "    0     # line from  RAVENSWD 115.00  BRKR to BRKR  PLO ALTO 115.00
0
#
# (168)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33316 38028  "1 "    0     # line from  CLY LNDG 115.00  BRKR to BRKR  PLO ALTO 115.00
0
#
# (169)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35105 35106  "2 "    0     # line from  EASTSHRE 115.00  BRKR to BRKR  MT EDEN  115.00
0
#
# (170)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30705 30710  "1 "    0     # line from  MONTAVIS 230.00  BRKR to (3)   SLAC JCT 230.00
1  30710 30711  "1 "    0     # line from  SLAC JCT 230.00   (3) to (1)   S.L.A.C. 230.00
1  30710 30715  "1 "    0     # line from  SLAC JCT 230.00   (3) to BRKR  JEFFERSN 230.00
0
#
# (171)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30735 30705  "2 "    0     # line from  METCALF  230.00  BRKR to BRKR  MONTAVIS 230.00
0
#
# (172)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30705 30720  "1 "    0     # line from  MONTAVIS 230.00  BRKR to BRKR  SARATOGA 230.00
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0
#
# (173)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30720 30733  "1 "    0     # line from  SARATOGA 230.00  BRKR to (2)   VASONA   230.00
0
#
# (174)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30705 30730  "1 "    0     # line from  MONTAVIS 230.00  BRKR to BRKR  HICKS    230.00
0
#
# (175)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30730 30735  "1 "    0     # line from  HICKS    230.00  BRKR to BRKR  METCALF  230.00
0
#
# (176)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30735 30750  "1 "    0     # line from  METCALF  230.00  BRKR to BRKR  MOSSLND2 230.00
0
# (177)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35350 35352  "1 "    0     # line from  AMES BS1 115.00  BRKR to BRKR  WHISMAN  115.00
0
#
# (178)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35352 35356  "1 "    0     # line from  WHISMAN  115.00  BRKR to BRKR  MNTA VSA 115.00
0
#
# (179)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35350 35353  "1 "    0     # line from  AMES BS1 115.00  BRKR to BRKR  MT VIEW  115.00
0
#
# (180)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35353 35356  "1 "    0     # line from  MT VIEW  115.00  BRKR to BRKR  MNTA VSA 115.00
0
#
# (181)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35350 35351  "1 "    0     # line from  AMES BS1 115.00  BRKR to BRKR   AMES BS2 115.00
0
#
# (182)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  33315 35351  "1 "    0     # line from  RAVENSWD 115.00  BRKR to BRKR   AMES BS2 115.00
0
#
# (183)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35356 35367  "1 "    0     # line from  MNTA VSA 115.00  BRKR to (3)   PHLPS_JT 115.00
1  35367 35363  "1 "    0     # line from  PHLPS_JT 115.00   (3) to BRKR  LAWRENCE 115.00
1  35367 35366  "1 "    0     # line from  PHLPS_JT 115.00   (3) to (1)   PHILLIPS 115.00
0
#
# (184)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35369 35365  "1 "    0     # line from  APP MAT  115.00   (2) to (3)   AMD JCT  115.00
1  35365 35360  "1 "    0     # line from  AMD JCT  115.00   (3) to (3)   LCKHD J2 115.00
1  35365 35364  "1 "    0     # line from  AMD JCT  115.00   (3) to (1)   A.M.D    115.00
1  35360 35122  "1 "    0     # line from  LCKHD J2 115.00   (3) to BRKR  NEWARK F 115.00
1  35360 35362  "1 "    0     # line from  LCKHD J2 115.00   (3) to (1)   LOCKHD 2 115.00
1  35361 35362  "1 "    1     # switch LOCKHD 1 115.00  LOCKHD 2  115.00
0
#
# (185)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35369 35368  "1 "    0     # line from  APP MAT  115.00  BRKR to BRKR  BRITTON  115.00
0
#
# (186)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35356 35368  "1 "    0     # line from  MNTA VSA 115.00  BRKR to BRKR  BRITTON  115.00
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0
#
# (187)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35354 35356  "1 "    0     # line from  STELLING 115.00  BRKR to BRKR  MNTA VSA 115.00
0
#
# (188)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35354 35355  "1 "    0     # line from  STELLING 115.00  BRKR to BRKR  WOLFE    115.00
0
#
# (189)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35355 35356  "1 "    0     # line from  WOLFE    115.00  BRKR to BRKR  MNTA VSA 115.00
0
#
# (190)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30705 30735  "1 "    0     # line from  MONTAVIS 230.00  BRKR to BRKR  METCALF  230.00
0
#
# (191)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30733 30735  "1 "    0     # line from  VASONA   230.00   (2) to BRKR  METCALF  230.00
0
#
# (192)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  36850 36852  "1 "    0     # line from  KIFER    115.00  BRKR to BRKR  SCOTT    115.00
0
#
# (193)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  36850 35615  "1 "    0     # line from  KIFER    115.00  BRKR to BRKR  FMC      115.00
0
#
# (194)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35615 35616  "1 "    0     # line from  FMC      115.00  BRKR to BRKR  SJ B   E 115.00
0
#
# (195)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35612 35613  "1 "    0     # line from  TRIMBLE  115.00  BRKR to (3)   GISH JCT 115.00
1  35613 35614  "1 "    0     # line from  GISH JCT 115.00   (3) to (1)   GISH     115.00
1  35613 35616  "1 "    0     # line from  GISH JCT 115.00   (3) to BRKR  SJ B   E 115.00
0
#
# (196)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35658 35610  "1 "    0     # line from  LS ESTRS 115.00  BRKR to BRKR  MONTAGUE 115.00
0
#
# (197)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35658 35612  "1 "    0     # line from  LS ESTRS 115.00  BRKR to BRKR  TRIMBLE  115.00
0
#
# (198)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35659 35658  "1 "    0     # line from  NORTECH  115.00  BRKR to BRKR  LS ESTRS 115.00
0
#
# (199)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35659 36850  "1 "    0     # line from  NORTECH  115.00  BRKR to BRKR  KIFER    115.00
0
#
# (200)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35658 35606  "1 "    0     # line from  LS ESTRS 115.00  BRKR to (2)   AGNEW    115.00
2  35606 35860  "1 "    0     # TRAN from  AGNEW    115.00   (2) to (1)   OLS-AGNE   9.11
0
#
# (201)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
```

```
#
1  35610 35612  "1 "    0     # line from  MONTAGUE 115.00  BRKR to BRKR  TRIMBLE  115.00
0
#
# (202)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35601 35624  "1 "    0     # line from  DIXON J1 115.00   (2) to BRKR  MILPITAS 115.00
1  35601 35122  "1 "    0     # line from  DIXON J1 115.00   (2) to BRKR  NEWARK F 115.00
0
#
# (203)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35618 35619  "1 "    0     # line from  SN JSE A 115.00  BRKR to BRKR  SJ B   F 115.00
0
#
# (204)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35618 35620  "1 "    0     # line from  SN JSE A 115.00  BRKR to BRKR  EL PATIO 115.00
0
#
# (205)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35620 35621  "1 "    0     # line from  EL PATIO 115.00  BRKR to (2)   IBM-HR J 115.00
1  35621 35642  "1 "    0     # line from  IBM-HR J 115.00  (2) to BRKR  MTCALF 1 115.00
0
#
# (206)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35620 35651  "1 "    0     # line from  EL PATIO 115.00  BRKR to (2)   BAILY J3 115.00
1  35651 35642  "1 "    0     # line from  BAILY J3 115.00  (2) to BRKR  MTCALF 1 115.00
0
#
# (207)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35619 35631  "1 "    0     # line from  SJ B   F 115.00  BRKR to (3)   MARKHM J 115.00
1  35631 35632  "1 "    0     # line from  MARKHM J 115.00  (3) to (2)   MARKHAM  115.00
1  35631 35636  "1 "    0     # line from  MARKHM J 115.00  (3) to BRKR  EVRGRN 1 115.00
2  35632 35863  "1 "    1     # TRAN from  MARKHAM  115.00  (2) to (1)   CATALYST   9.11
1  35632 35634  "1 "    1     # move Markham to Stone
0
#
# (208)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35633 35645  "1 "    0     # line from  EVRGRN 2 115.00  (3) to (3)   EVRGRN J 115.00
1  35645 35634  "1 "    0     # line from  EVRGRN J 115.00  (3) to (2)   STONE J  115.00
1  35645 35643  "1 "    0     # line from  EVRGRN J 115.00  (3) to BRKR  MTCALF 2 115.00
1  35632 35634  "1 "    1     # move  Stone to Markham
0
#
# (209)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35636 35643  "1 "    0     # line from  EVRGRN 1 115.00  BRKR to BRKR  MTCALF 2 115.00
0
#
# (210)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35637 35649  "1 "    1     # line from  IBM-CTLE 115.00  (1) to (3)   EDNVL J3 115.00
1  35649 35638  "1 "    1     # line from  EDNVL J3 115.00  (3) to BRKR  EDENVALE 115.00
1  35649 35641  "1 "    0     # line from  EDNVL J3 115.00  (3) to (3)   EDNVL J1 115.00
1  35641 35639  "1 "    0     # line from  EDNVL J1 115.00  (3) to (1)   IBM-HRRS 115.00
1  35641 35642  "1 "    0     # line from  EDNVL J1 115.00  (3) to BRKR  MTCALF 1 115.00
1  35621 35639  "1 "    1     # switch IBM Harry to Metcalf-El Patio
0
#
# (211)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35638 35653  "1 "    0     # line from  EDENVALE 115.00  BRKR to (3)   BAILY J2 115.00
1  35653 35642  "1 "    0     # line from  BAILY J2 115.00  (3) to BRKR  MTCALF 1 115.00
1  35653 35652  "1 "    0     # line from  BAILY J2 115.00  (3) to (2)   BAILY J1 115.00
1  35652 35640  "1 "    1     # line from  BAILY J1 115.00  (2) to (1)   IBM-BALY 115.00
1  35651 35652  "1 "    1     # switch IBM Bailey to El Patio
0
#
# (212)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35600 35629  "1 "    0     # line from  DIXON LD 115.00  BRKR to (3)   MABURY J 115.00
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1  35629 35626  "1 "    0     # line from  MABURY J 115.00   (3) to BRKR  MCKEE    115.00
1  35629 35630  "1 "    0     # line from  MABURY J 115.00   (3) to (1)   MABURY   115.00
0
#
# (213)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35626 35643  "1 "    0     # line from  MCKEE    115.00  BRKR to BRKR  MTCALF 2 115.00
0
#
# (214)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35624 35622  "1 "    0     # line from  MILPITAS 115.00  BRKR to BRKR  SWIFT    115.00
1  35624 35627  "1 "    0     # line from  MILPITAS 115.00  BRKR to (2)   FD.PCF J 115.00
1  35627 35628  "1 "    0     # line from  FD.PCF J 115.00   (2) to (1)   FD.PCFIC 115.00
0
#
# (215)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35622 35643  "1 "    0     # line from  SWIFT    115.00  BRKR to BRKR  MTCALF 2 115.00
0
#
# (216)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35642 35646  "1 "    0     # line from  MTCALF 1 115.00  BRKR to BRKR  MRGN HIL 115.00
1  35654 35655  "1 "    1     # switch line MORG J1  115   MORG J2 115
0
#
# (217)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35646 35648  "1 "    0     # line from  MRGN HIL 115.00  BRKR to BRKR  LLAGAS   115.00
0
#
# (218)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35648 35650  "1 "    0     # line from  LLAGAS   115.00  BRKR to (2)   GILROY F 115.00
2  35650 35850  "1 "    0     # TRAN from  GILROY F 115.00   (2) to (1)   GLRY COG  13.80
0
#
# (219)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35648 35655  "1 "    0     # line from  LLAGAS   115.00  BRKR to (2)   MORGN J2 115.00
1  35655 35903  "1 "    0     # line from  MORGN J2 115.00   (2) to (4)   GRN VLY2 115.00
0
#
# (220)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35643 35644  "1 "    0     # line from  MTCALF 2 115.00  BRKR to (1)   CYTE PMP 115.00
0
#
# (221)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  35642 35654  "1 "    0     # line from  MTCALF 1 115.00  BRKR to (2)   MORGN J1 115.00
1  35654 35901  "1 "    0     # line from  MORGN J1 115.00   (2) to BRKR  GRN VLY1 115.00
0
# (222)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30705 30741  "1 "    0     # line from  MONTAVIS 230.00  BRKR to (1)   CAL_METC 230.00
0
# (223)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
#
1  30735 30741  "1 "    0     # line from  METCALF  230.00  BRKR to (1)   CAL_METC 230.00
0
#
# (224)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30015 30030  "1 "    0     # line from  TABLE MT 500.00  BRKR to BRKR  VACA-DIX 500.00
#
0
# (225)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30015 30040  "1 "    0     # line from  TABLE MT 500.00  BRKR to BRKR  TESLA    500.00
#
0
# (226)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30030 30040  "1 "    0     # line from  VACA-DIX 500.00  BRKR to BRKR  TESLA    500.00
#
0
# (227)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
```

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1  30035 30040  "1 "    0     # line from  TRACY    500.00  BRKR to BRKR  TESLA    500.00
#
0
# (228)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30035 30050  "1 "    0     # line from  TRACY    500.00  BRKR to BRKR  LOSBANOS 500.00
#
0
# (229)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30040 30042  "1 "    0     # line from  TESLA    500.00  BRKR to BRKR  METCALF  500.00
#
0
# (230)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30040 30050  "1 "    0     # line from  TESLA    500.00  BRKR to BRKR  LOSBANOS 500.00
#
0
# (231)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30042 30045  "1 "    0     # line from  METCALF  500.00  BRKR to BRKR  MOSSLAND 500.00
#
0
# (232)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30045 30050  "1 "    0     # line from  MOSSLAND 500.00  BRKR to BRKR  LOSBANOS 500.00
0
# (233)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30050 30055  "1 "    0     # line from  LOSBANOS 500.00  BRKR to BRKR  GATES    500.00
0
# (234)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30050 30060  "1 "    0     # line from  LOSBANOS 500.00  BRKR to BRKR  MIDWAY   500.00
0
# (235)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30055 30057  "1 "    0     # line from  GATES    500.00  BRKR to BRKR  DIABLO   500.00
0
# (236)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
1  30055 30060  "1 "    0     # line from  GATES    500.00  BRKR to BRKR  MIDWAY   500.00
0
#
# (237)  TRANSFORMER OUTAGE
2  30030 30067  "1 "    0     # TRAN from  VACA-DIX 500.00  BRKR to (3)   VC DX11M 500.00
2  30067 30460  "1 "    0     # TRAN from  VC DX11M 500.00   (3) to BRKR  VACA-DIX 230.00
2  30067 32152  "1 "    0     # TRAN from  VC DX11M 500.00   (3) to (1)   VC DX11T  13.80
0
#
# (238)  TRANSFORMER OUTAGE
2  30040 30068  "1 "    0     # TRAN from  TESLA    500.00  BRKR to (3)   TESLA 2M 500.00
2  30068 30624  "1 "    0     # TRAN from  TESLA 2M 500.00   (3) to BRKR  TESLA E  230.00
2  30068 33802  "1 "    0     # TRAN from  TESLA 2M 500.00   (3) to (1)   TESLA 2T  13.80
0
#
# (239)  TRANSFORMER OUTAGE
2  30625 30040  "1 "    0     # TRAN from  TESLA D  230.00  BRKR to BRKR  TESLA    500.00
0
# (240)  TRANSFORMER OUTAGE
2  30050 30069  "1 "    0     # TRAN from  LOSBANOS 500.00  BRKR to (3)   L.BANS M 500.00
2  30069 30765  "1 "    0     # TRAN from  L.BANS M 500.00   (3) to BRKR  LOSBANOS 230.00
2  30069 34302  "1 "    0     # TRAN from  L.BANS M 500.00   (3) to (1)   L.BANS T  13.80
0
# (241)  TRANSFORMER OUTAGE
2  30055 30070  "1 "    0     # TRAN from  GATES    500.00  BRKR to (3)   GATES11M 500.00
2  30070 30900  "1 "    0     # TRAN from  GATES11M 500.00   (3) to BRKR  GATES    230.00
2  30070 34606  "1 "    0     # TRAN from  GATES11M 500.00   (3) to (1)   GATES11T  13.80
0
# (242)  TRANSFORMER OUTAGE
2  30735 30042  "1 "    0     # TRAN from  METCALF  230.00  BRKR to BRKR  METCALF  500.00
0
# (243)  TRANSFORMER OUTAGE
2  30735 30042  "2 "    0     # TRAN from  METCALF  230.00  BRKR to BRKR  METCALF  500.00
0
# (244)  TRANSFORMER OUTAGE
2  30750 30045  "1 "    0     # TRAN from  MOSSLND2 230.00  BRKR to BRKR  MOSSLAND 500.00
0
# (245)
1  30735 30741  "1 "    0     # line from  METCALF  230.00  BRKR to BRKR  CAL METC 230.00
#
0
# (246)
1  30705 30741  "1 "    0     # line from  MONTAVIS 230.00  BRKR to BRKR  CAL METC 230.00
#
```

Attachment 3:
Power Flow Results

Attachment 3: Power Flow Results

a. Summer Off-Peak with MEC in-service following Level C contingencies.

b. Summer Off-Peak without MEC in-service following Level C contingencies.

c. Summer Peak with MEC in-service following Level C contingencies.

d. Summer Peak without MEC in-service following Level C contingencies.

e. South Bay Stress Scenario with MEC in-service following Level C contingencies.

f. South Bay Stress Scenario without MEC in-service following Level C contingencies.

g. South Bay Stress Scenario with MEC in-service following Level B contingencies.

h. South Bay Stress Scenario without MEC in-service following Level B contingencies.

ATTACHMENTS 3A: YEAR 2002 SUMMER OFF-PEAK CASE

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
OFFPEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus------				--------TO bus---------				loading p.u.(rate 3)				-------- outage ----(Rate 3)		contingecy
bus	--name--	-kv--	-zn-	bus	---name--	-kv-	-zn-	ID	base	outage	MW	MVAR	FLOW	RATING	number
(1)															
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.06	82.81	18.27	84.80 MVA	80.00 MVA	offpeak_mec 28
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.06	82.85	18.23	84.83 MVA	80.00 MVA	offpeak_mec 77
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.06	82.96	18.29	84.95 MVA	80.00 MVA	offpeak_mec 40
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.06	83.03	18.22	85.00 MVA	80.00 MVA	offpeak_mec 62
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.06	83.12	18.15	85.08 MVA	80.00 MVA	offpeak_mec 16
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.07	83.22	18.40	85.23 MVA	80.00 MVA	offpeak_mec 60
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.07	83.22	18.41	85.23 MVA	80.00 MVA	offpeak_mec 61
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.07	83.41	18.86	85.51 MVA	80.00 MVA	offpeak_mec 20
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.07	83.43	18.60	85.48 MVA	80.00 MVA	offpeak_mec 58
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.08	83.94	19.14	86.09 MVA	80.00 MVA	offpeak_mec 69
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.08	84.49	19.38	86.68 MVA	80.00 MVA	offpeak_mec 72
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.10	85.55	19.74	87.80 MVA	80.00 MVA	offpeak_mec 73
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.11	86.27	20.13	88.59 MVA	80.00 MVA	offpeak_mec 54
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.11	86.70	18.93	88.74 MVA	80.00 MVA	offpeak_mec 4
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.13	88.27	20.32	90.58 MVA	80.00 MVA	offpeak_mec 56
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.13	88.35	19.25	90.42 MVA	80.00 MVA	offpeak_mec 5
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.14	88.70	19.78	90.88 MVA	80.00 MVA	offpeak_mec 6
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.16	90.39	21.08	92.81 MVA	80.00 MVA	offpeak_mec 57
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.17	90.56	23.93	93.67 MVA	80.00 MVA	offpeak_mec 59
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.17	90.71	23.93	93.82 MVA	80.00 MVA	offpeak_mec 65
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.17	90.75	23.97	93.86 MVA	80.00 MVA	offpeak_mec 8
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.19	91.60	24.79	94.89 MVA	80.00 MVA	offpeak_mec 14
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.25	97.72	22.08	100.19 MVA	80.00 MVA	offpeak_mec 55
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.05	1.48	109.64	45.53	118.72 MVA	80.00 MVA	offpeak_mec 13
(2)															
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.59	1.07	104.27	49.29	115.33 MVA	107.50 MVA	offpeak_mec 2
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.59	1.07	104.38	49.30	115.43 MVA	107.50 MVA	offpeak_mec 53
(3)															
30735	METCALF	230	18	30738	MTCALF2M	230	18	1	0.57	1.32	523.88	168.80	1335.59 AMPS	1011.62 AMPS	offpeak_mec 72
(4)															
30738	MTCALF2M	230	18	35643	MTCALF 2	115	18	1	0.50	1.15	-521.87	-107.71	532.87 MVA	463.70 MVA	offpeak_mec 72
(5)															
32792	STATIN J	115	7	32798	OWENSTAP	115	7	1	0.76	1.11	168.61	64.93	894.94 AMPS	807.79 AMPS	offpeak_mec 54
32792	STATIN J	115	7	32798	OWENSTAP	115	7	1	0.76	1.11	169.79	-66.84	900.64 AMPS	807.79 AMPS	offpeak_mec 56
32792	STATIN J	115	7	32798	OWENSTAP	115	7	1	0.76	1.16	174.05	75.51	933.10 AMPS	807.79 AMPS	offpeak_mec 55
(6)															
32798	OWENSTAP	115	7	35103	EDS GRNT	115	7	1	0.72	1.07	159.34	-69.12	860.31 AMPS	807.79 AMPS	offpeak_mec 54
32798	OWENSTAP	115	7	35103	EDS GRNT	115	7	1	0.72	1.07	160.52	71.03	866.40 AMPS	807.79 AMPS	offpeak_mec 56
32798	OWENSTAP	115	7	35103	EDS GRNT	115	7	1	0.72	1.11	164.78	-79.71	900.25 AMPS	807.79 AMPS	offpeak_mec 55

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
OFFPEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus------				---------TO bus---------				loading p.u.(rate 3)			-------- outage ----(Rate 3)					contingecy
bus	--name--	-kv--	-zn-	bus	---name--	-kv-	-zn-	-ID	base	outage	MW	MVAR	FLOW	RATING		number
(7)																
35103	EDS GRNT	115	7	35104	GRANT	115	16	1	0.72	1.06	158.49	-70.63	859.74 AMPS	807.79 AMPS	offpeak_mec	54
35103	EDS GRNT	115	7	35104	GRANT	115	16	1	0.72	1.07	159.66	-72.57	865.82 AMPS	807.79 AMPS	offpeak_mec	56
35103	EDS GRNT	115	7	35104	GRANT	115	16	1	0.72	1.11	163.86	-81.38	899.63 AMPS	807.79 AMPS	offpeak_mec	55
(8)																
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.59	1.14	-94.72	-21.36	997.84 AMPS	875.65 AMPS	offpeak_mec	2
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.59	1.14	-94.82	-21.31	998.81 AMPS	875.65 AMPS	offpeak_mec	53
(9)																
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	0.57	1.46	102.85	21.33	1079.48 AMPS	740.93 AMPS	offpeak_mec	2
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	0.57	1.46	102.90	21.31	1079.88 AMPS	740.93 AMPS	offpeak_mec	53
(10)																
35205	RADUM	60	16	35206	KAISER	60	16	1	0.42	1.29	-90.15	-5.67	958.64 AMPS	740.93 AMPS	offpeak_mec	2
35205	RADUM	60	16	35206	KAISER	60	16	1	0.42	1.29	-90.19	-5.65	959.06 AMPS	740.93 AMPS	offpeak_mec	53
(11)																
35205	RADUM	60	16	35219	VINEYARD	60	16	1	0.87	1.03	99.57	3.51	998.14 AMPS	971.87 AMPS	offpeak_mec	14
(12)																
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.02	77.13	0.65	757.04 AMPS	740.93 AMPS	offpeak_mec	56
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.02	77.21	-0.36	755.90 AMPS	740.93 AMPS	offpeak_mec	5
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.02	77.56	0.05	758.91 AMPS	740.93 AMPS	offpeak_mec	6
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.05	79.16	0.52	778.51 AMPS	740.93 AMPS	offpeak_mec	57
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.06	79.31	3.04	785.22 AMPS	740.93 AMPS	offpeak_mec	59
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.06	79.46	2.98	786.62 AMPS	740.93 AMPS	offpeak_mec	65
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.06	79.49	3.00	787.04 AMPS	740.93 AMPS	offpeak_mec	8
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.07	80.30	3.43	795.98 AMPS	740.93 AMPS	offpeak_mec	14
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.14	86.22	-1.45	847.27 AMPS	740.93 AMPS	offpeak_mec	55
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.94	1.38	97.30	13.16	1019.18 AMPS	740.93 AMPS	offpeak_mec	13
(13)																
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.51	1.39	-97.04	-11.57	1030.70 AMPS	740.93 AMPS	offpeak_mec	2
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.51	1.39	-97.09	-11.55	1031.11 AMPS	740.93 AMPS	offpeak_mec	53
(14)																
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.07	82.49	8.06	795.04 AMPS	740.93 AMPS	offpeak_mec	32
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.07	82.52	8.07	795.27 AMPS	740.93 AMPS	offpeak_mec	28
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.07	82.55	8.03	795.50 AMPS	740.93 AMPS	offpeak_mec	77
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.08	82.66	8.06	796.68 AMPS	740.93 AMPS	offpeak_mec	40
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.08	82.73	7.98	796.89 AMPS	740.93 AMPS	offpeak_mec	62
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.08	82.82	7.89	797.72 AMPS	740.93 AMPS	offpeak_mec	16
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.08	82.92	8.10	799.02 AMPS	740.93 AMPS	offpeak_mec	60
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.08	82.92	8.12	799.04 AMPS	740.93 AMPS	offpeak_mec	61
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.08	83.11	8.49	802.36 AMPS	740.93 AMPS	offpeak_mec	20
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.08	83.13	8.25	801.54 AMPS	740.93 AMPS	offpeak_mec	58
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.09	83.63	8.62	807.98 AMPS	740.93 AMPS	offpeak_mec	69
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.10	84.18	8.71	814.38 AMPS	740.93 AMPS	offpeak_mec	72
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.11	85.23	8.78	825.77 AMPS	740.93 AMPS	offpeak_mec	73
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.12	86.37	7.79	832.78 AMPS	740.93 AMPS	offpeak_mec	4
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.07	1.13	85.94	8.96	834.19 AMPS	740.93 AMPS	offpeak_mec	54

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
OFFPEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus------				---------TO bus---------				loading p.u.(rate 3)			-------- outage ----(Rate 3)				contingecy
bus	--name--	-kv--zn-	bus	---name--	-kv-zn-	ID	base	outage	MW	MVAR	FLOW		RATING		number
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.15	87.93	8.72	850.63 AMPS		740.93 AMPS		offpeak_mec 56
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.15	88.01	7.69	849.04 AMPS		740.93 AMPS		offpeak_mec 5
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.15	88.36	8.14	852.08 AMPS		740.93 AMPS		offpeak_mec 6
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.18	90.03	8.91	872.24 AMPS		740.93 AMPS		offpeak_mec 57
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.19	90.20	11.54	879.98 AMPS		740.93 AMPS		offpeak_mec 59
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.19	90.35	11.51	881.36 AMPS		740.93 AMPS		offpeak_mec 65
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.19	90.38	11.53	881.79 AMPS		740.93 AMPS		offpeak_mec 8
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.20	91.22	12.10	890.89 AMPS		740.93 AMPS		offpeak_mec 14
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.27	97.31	7.99	940.51 AMPS		740.93 AMPS		offpeak_mec 55
35209	SAN RAMN	60 16	35221	E DUBLIN	60 16	1	1.07	1.51	109.05	25.75	1119.46 AMPS		740.93 AMPS		offpeak_mec 13
(15)															
35212	IUKA	60 16	35213	VALLECTS	60 16	1	0.29	1.01	-31.08	1.58	329.95 AMPS		326.20 AMPS		offpeak_mec 53
35212	IUKA	60 16	35213	VALLECTS	60 16	1	0.29	1.01	-31.13	1.61	330.41 AMPS		326.20 AMPS		offpeak_mec 2
(16)															
35213	VALLECTS	60 16	35214	SUNOL	60 16	1	0.32	1.04	-32.97	-1.23	340.84 AMPS		326.20 AMPS		offpeak_mec 53
35213	VALLECTS	60 16	35214	SUNOL	60 16	1	0.32	1.05	-33.02	-1.22	341.30 AMPS		326.20 AMPS		offpeak_mec 2
(17)															
35214	SUNOL	60 16	35216	DCTO JCT	60 16	1	0.41	1.13	-36.19	-2.65	369.90 AMPS		326.20 AMPS		offpeak_mec 53
35214	SUNOL	60 16	35216	DCTO JCT	60 16	1	0.41	1.14	-36.23	-2.64	370.35 AMPS		326.20 AMPS		offpeak_mec 2
(18)															
35216	DCTO JCT	60 16	35217	NEWARK	60 16	1	0.41	1.13	-36.86	-3.76	369.84 AMPS		326.20 AMPS		offpeak_mec 53
35216	DCTO JCT	60 16	35217	NEWARK	60 16	1	0.41	1.14	-36.90	-3.75	370.30 AMPS		326.20 AMPS		offpeak_mec 2
(19)															
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.01	76.22	2.23	746.76 AMPS		740.93 AMPS		offpeak_mec 72
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.02	77.25	2.16	758.05 AMPS		740.93 AMPS		offpeak_mec 73
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.03	77.94	2.22	766.33 AMPS		740.93 AMPS		offpeak_mec 54
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.03	78.37	1.08	765.50 AMPS		740.93 AMPS		offpeak_mec 4
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.06	79.88	1.77	783.03 AMPS		740.93 AMPS		offpeak_mec 56
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.06	79.96	0.76	781.75 AMPS		740.93 AMPS		offpeak_mec 5
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.06	80.31	1.17	784.77 AMPS		740.93 AMPS		offpeak_mec 6
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.09	81.92	1.67	804.54 AMPS		740.93 AMPS		offpeak_mec 57
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.10	82.06	4.20	811.58 AMPS		740.93 AMPS		offpeak_mec 59
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.10	82.21	4.15	812.96 AMPS		740.93 AMPS		offpeak_mec 65
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.10	82.24	4.16	813.39 AMPS		740.93 AMPS		offpeak_mec 8
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.11	83.06	4.61	822.38 AMPS		740.93 AMPS		offpeak_mec 14
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.18	88.99	-0.21	873.13 AMPS		740.93 AMPS		offpeak_mec 55
35221	E DUBLIN	60 16	35223	PARKS TP	60 16	1	0.98	1.41	100.13	14.69	1047.21 AMPS		740.93 AMPS		offpeak_mec 13
(20)															
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.09	0.00	46.71	46.71 MVA		43.00 MVA		offpeak_mec 33
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.09	0.00	46.71	46.71 MVA		43.00 MVA		offpeak_mec 75
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.09	0.00	46.76	46.76 MVA		43.00 MVA		offpeak_mec 17
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.09	0.00	46.79	46.79 MVA		43.00 MVA		offpeak_mec 26
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.09	0.00	47.03	47.03 MVA		43.00 MVA		offpeak_mec 21
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.09	-0.00	46.78	46.78 MVA		43.00 MVA		offpeak_mec 19
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.09	-0.00	46.85	46.85 MVA		43.00 MVA		offpeak_mec 16
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.09	-0.00	46.90	46.90 MVA		43.00 MVA		offpeak_mec 34
35907	PAUL SWT	115 19	36218	M	115 19	1	1.07	1.10	0.00	47.24	47.24 MVA		43.00 MVA		offpeak_mec 8

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
OFFPEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus------				--------TO bus---------				loading p.u.(rate 3)			-------- outage ----(Rate 3)			contingecy	
bus	--name--	-kv--	zn-	bus	---name--	-kv-	zn-ID	base	outage	MW	MVAR	FLOW	RATING	number	
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.10	0.00	47.36	47.36 MVA	43.00 MVA	offpeak_mec	25
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.10	0.00	47.36	47.36 MVA	43.00 MVA	offpeak_mec	71
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.10	-0.00	47.14	47.14 MVA	43.00 MVA	offpeak_mec	65
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.10	-0.00	47.33	47.33 MVA	43.00 MVA	offpeak_mec	38
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.10	-0.00	47.34	47.34 MVA	43.00 MVA	offpeak_mec	27
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.10	-0.00	47.34	47.34 MVA	43.00 MVA	offpeak_mec	29
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.10	-0.00	47.34	47.34 MVA	43.00 MVA	offpeak_mec	30
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.10	-0.00	47.34	47.34 MVA	43.00 MVA	offpeak_mec	39
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.11	0.00	47.89	47.89 MVA	43.00 MVA	offpeak_mec	22
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.11	-0.00	47.60	47.60 MVA	43.00 MVA	offpeak_mec	36
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.11	-0.00	47.76	47.76 MVA	43.00 MVA	offpeak_mec	41
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.11	-0.00	47.76	47.76 MVA	43.00 MVA	offpeak_mec	74
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.11	-0.00	47.93	47.93 MVA	43.00 MVA	offpeak_mec	47
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.12	-0.00	48.27	48.27 MVA	43.00 MVA	offpeak_mec	20
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.12	-0.00	48.30	48.30 MVA	43.00 MVA	offpeak_mec	18
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.13	0.00	48.42	48.42 MVA	43.00 MVA	offpeak_mec	35
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.13	0.00	48.53	48.53 MVA	43.00 MVA	offpeak_mec	70
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.13	-0.00	48.48	48.48 MVA	43.00 MVA	offpeak_mec	15
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.14	0.00	49.17	49.17 MVA	43.00 MVA	offpeak_mec	50
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.15	0.00	49.47	49.47 MVA	43.00 MVA	offpeak_mec	82
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.15	-0.00	49.32	49.32 MVA	43.00 MVA	offpeak_mec	69
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.16	-0.00	49.79	49.79 MVA	43.00 MVA	offpeak_mec	68
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.18	-0.00	50.61	50.61 MVA	43.00 MVA	offpeak_mec	78
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.22	-0.00	52.50	52.50 MVA	43.00 MVA	offpeak_mec	79
35907	PAUL SWT	115	19	36218	M	115	19 1	1.07	1.23	-0.00	52.95	52.95 MVA	43.00 MVA	offpeak_mec	80
(21)															
35911	LGNTSSW1	115	19	35914	NTVD SW1	115	19 1	0.19	1.02	86.57	15.17	415.96 AMPS	406.66 AMPS	offpeak_mec	80

Attachment 3 - Power Flow Results

ATTACHMENTS 3B:
BRANCH LOADING FLAGS:
OFFPEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus--------				--------TO bus--------					loading p.u.(rate 3)		-------- outage ---------			(Rate 3)		contingency	
bus	--name--	-kv-	zn	bus	--name--	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING		number	
(1)																	
30526	PITSBURG	230	8	30561	TASSAJAR	230	8	1	0.77	1.01	429.57	63.29	1065.64 AMPS	1054.04 AMPS	offpeak	56	
(2)																	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.08	84.65	19.11	86.78 MVA	80.00 MVA	offpeak	28	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.08	84.68	19.05	86.80 MVA	80.00 MVA	offpeak	40	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.09	84.77	18.83	86.84 MVA	80.00 MVA	offpeak	16	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.09	84.77	19.12	86.90 MVA	80.00 MVA	offpeak	62	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.09	84.99	19.21	87.13 MVA	80.00 MVA	offpeak	77	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.09	85.00	19.49	87.21 MVA	80.00 MVA	offpeak	20	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.09	85.03	19.24	87.18 MVA	80.00 MVA	offpeak	61	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.09	85.04	19.23	87.18 MVA	80.00 MVA	offpeak	60	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.09	85.29	19.57	87.51 MVA	80.00 MVA	offpeak	58	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.10	85.41	19.66	87.65 MVA	80.00 MVA	offpeak	69	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.10	85.55	19.74	87.80 MVA	80.00 MVA	offpeak	73	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.11	86.11	20.15	88.44 MVA	80.00 MVA	offpeak	72	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.13	87.69	21.32	90.25 MVA	80.00 MVA	offpeak	54	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.13	87.95	19.73	90.14 MVA	80.00 MVA	offpeak	4	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.16	90.35	20.18	92.57 MVA	80.00 MVA	offpeak	5	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.16	90.40	21.47	92.92 MVA	80.00 MVA	offpeak	56	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.17	90.92	20.96	93.30 MVA	80.00 MVA	offpeak	6	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.19	91.56	24.68	94.83 MVA	80.00 MVA	offpeak	59	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.19	91.71	24.63	94.96 MVA	80.00 MVA	offpeak	65	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.19	91.75	24.66	95.00 MVA	80.00 MVA	offpeak	8	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.19	92.71	22.64	95.44 MVA	80.00 MVA	offpeak	57	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.20	92.51	25.47	95.96 MVA	80.00 MVA	offpeak	14	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.29	100.11	23.42	102.81 MVA	80.00 MVA	offpeak	55	
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.08	1.50	110.89	46.19	120.12 MVA	80.00 MVA	offpeak	13	
(3)																	
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.59	1.08	105.38	49.76	116.54 MVA	107.50 MVA	offpeak	2	
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.59	1.08	105.49	49.76	116.64 MVA	107.50 MVA	offpeak	53	(4)
30735	METCALF	230	18	30738	MTCALF2M	230	18	1	0.52	1.19	467.22	152.97	1203.44 AMPS	1011.62 AMPS	offpeak	72	
(5)																	
30738	MTCALF2M	230	18	35643	MTCALF 2	115	18	1	0.46	1.03	-465.59	103.37	476.92 MVA	463.70 MVA	offpeak	72	
(6)																	
32792	STATIN J	115	7	32798	OWENSTAP	115	7	1	0.81	1.05	158.92	-63.60	847.08 AMPS	807.79 AMPS	offpeak	57	
32792	STATIN J	115	7	32798	OWENSTAP	115	7	1	0.81	1.17	179.72	-63.21	948.61 AMPS	807.79 AMPS	offpeak	54	
32792	STATIN J	115	7	32798	OWENSTAP	115	7	1	0.81	1.19	183.04	-66.87	965.28 AMPS	807.79 AMPS	offpeak	56	
32792	STATIN J	115	7	32798	OWENSTAP	115	7	1	0.81	1.23	185.96	-75.72	990.24 AMPS	807.79 AMPS	offpeak	55	
(7)																	
32798	OWENSTAP	115	7	35103	EDS GRNT	115	7	1	0.77	1.01	149.66	-67.79	813.02 AMPS	807.79 AMPS	offpeak	57	
32798	OWENSTAP	115	7	35103	EDS GRNT	115	7	1	0.77	1.13	170.45	-67.41	912.67 AMPS	807.79 AMPS	offpeak	54	
32798	OWENSTAP	115	7	35103	EDS GRNT	115	7	1	0.77	1.15	173.77	-71.07	929.95 AMPS	807.79 AMPS	offpeak	56	
32798	OWENSTAP	115	7	35103	EDS GRNT	115	7	1	0.77	1.18	176.69	-79.92	956.40 AMPS	807.79 AMPS	offpeak	55	

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS:
OFFPEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus------				---------TO bus---------				loading p.u.(rate 3)		-------- outage ----(Rate 3)					contingecy
bus	--name--	-kv--	zn-	bus	---name--	-kv-	zn-	ID	base	outage	MW	MVAR	FLOW	RATING	number
(8)															
35103	EDS GRNT	115	7	35104	GRANT	115	16	1	0.77	1.01	148.90	-69.11	812.43 AMPS	807.79 AMPS	offpeak 57
35103	EDS GRNT	115	7	35104	GRANT	115	16	1	0.77	1.13	169.50	-69.15	912.14 AMPS	807.79 AMPS	offpeak 54
35103	EDS GRNT	115	7	35104	GRANT	115	16	1	0.77	1.15	172.79	-72.88	929.41 AMPS	807.79 AMPS	offpeak 56
35103	EDS GRNT	115	7	35104	GRANT	115	16	1	0.77	1.18	175.65	-81.85	955.80 AMPS	807.79 AMPS	offpeak 55
(9)															
35104	GRANT	115	16	35105	EASTSHRE	115	16	1	0.61	1.01	138.37	-86.76	804.62 AMPS	799.76 AMPS	offpeak 55
(10)															
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.59	1.16	95.77	-21.07	1013.28 AMPS	875.65 AMPS	offpeak 2
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.59	1.16	-95.87	-21.02	1014.07 AMPS	875.65 AMPS	offpeak 53
(11)															
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	0.57	1.47	103.30	21.30	1089.93 AMPS	740.93 AMPS	offpeak 2
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	0.57	1.47	103.34	21.28	1090.14 AMPS	740.93 AMPS	offpeak 53
(12)															
35205	RADUM	60	16	35206	KAISER	60	16	1	0.41	1.31	-90.56	-5.48	968.52 AMPS	740.93 AMPS	offpeak 2
35205	RADUM	60	16	35206	KAISER	60	16	1	0.41	1.31	-90.60	-5.46	968.76 AMPS	740.93 AMPS	offpeak 53
(13)															
35205	RADUM	60	16	35219	VINEYARD	60	16	1	0.88	1.00	97.26	0.21	972.51 AMPS	971.87 AMPS	offpeak 54
35205	RADUM	60	16	35219	VINEYARD	60	16	1	0.88	1.03	99.57	3.52	1001.52 AMPS	971.87 AMPS	offpeak 14
(14)															
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.02	76.55	1.57	758.00 AMPS	740.93 AMPS	offpeak 54
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.02	76.82	0.18	754.04 AMPS	740.93 AMPS	offpeak 4
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.05	79.13	-0.32	777.26 AMPS	740.93 AMPS	offpeak 5
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.05	79.17	0.82	780.28 AMPS	740.93 AMPS	offpeak 56
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.06	79.68	0.23	782.57 AMPS	740.93 AMPS	offpeak 6
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.08	80.25	3.26	797.32 AMPS	740.93 AMPS	offpeak 59
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.08	80.40	3.16	798.49 AMPS	740.93 AMPS	offpeak 65
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.08	80.44	3.17	798.88 AMPS	740.93 AMPS	offpeak 8
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.09	81.17	3.63	807.16 AMPS	740.93 AMPS	offpeak 14
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.09	81.38	0.94	804.70 AMPS	740.93 AMPS	offpeak 57
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.18	88.49	-1.30	872.80 AMPS	740.93 AMPS	offpeak 55
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.97	1.40	98.47	13.00	1034.03 AMPS	740.93 AMPS	offpeak 13
(15)															
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.50	1.40	-97.46	-11.41	1040.92 AMPS	740.93 AMPS	offpeak 2
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.50	1.41	-97.50	-11.39	1041.14 AMPS	740.93 AMPS	offpeak 53
(16)															
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.09	1.10	84.34	8.41	815.34 AMPS	740.93 AMPS	offpeak 28
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.09	1.10	84.37	8.36	815.36 AMPS	740.93 AMPS	offpeak 40
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.09	1.10	84.46	8.13	815.48 AMPS	740.93 AMPS	offpeak 16
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.09	1.10	84.46	8.40	816.24 AMPS	740.93 AMPS	offpeak 62
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.09	1.11	84.67	8.43	818.83 AMPS	740.93 AMPS	offpeak 77
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.09	1.11	84.69	8.69	819.45 AMPS	740.93 AMPS	offpeak 20
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.09	1.11	84.72	8.45	818.84 AMPS	740.93 AMPS	offpeak 60
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.09	1.11	84.72	8.46	818.86 AMPS	740.93 AMPS	offpeak 61

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS:

OFFPEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus------				---------TO bus---------				loading p.u.(rate 3)				-------- outage ----(Rate 3)		contingecy
bus	--name--	-kv--zn-		bus	---name--	-kv-zn-ID		base	outage	MW	MVAR	FLOW	RATING	number
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.11	84.97	8.70	822.17 AMPS	740.93 AMPS	offpeak 58
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.11	85.09	8.75	823.58 AMPS	740.93 AMPS	offpeak 69
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.11	85.23	8.78	825.77 AMPS	740.93 AMPS	offpeak 73
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.12	85.79	9.02	832.27 AMPS	740.93 AMPS	offpeak 72
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.14	87.61	8.20	847.54 AMPS	740.93 AMPS	offpeak 4
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.15	87.35	9.67	852.58 AMPS	740.93 AMPS	offpeak 54
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.18	89.99	8.04	870.71 AMPS	740.93 AMPS	offpeak 5
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.18	90.04	9.24	874.28 AMPS	740.93 AMPS	offpeak 56
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.18	90.56	8.67	876.12 AMPS	740.93 AMPS	offpeak 6
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.20	91.18	11.95	892.42 AMPS	740.93 AMPS	offpeak 59
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.21	91.34	11.87	893.55 AMPS	740.93 AMPS	offpeak 65
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.21	91.37	11.89	893.95 AMPS	740.93 AMPS	offpeak 8
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.21	92.33	9.73	899.02 AMPS	740.93 AMPS	offpeak 57
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.22	92.13	12.47	902.39 AMPS	740.93 AMPS	offpeak 14
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.30	99.67	8.56	966.42 AMPS	740.93 AMPS	offpeak 55
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16 1	1.09	1.53	110.28	25.88	1134.59 AMPS	740.93 AMPS	offpeak 13
(17)														
35212	IUKA	60	16	35213	VALLECTS	60	16 1	0.26	1.00	-30.67	1.39	327.35 AMPS	326.20 AMPS	offpeak 53
35212	IUKA	60	16	35213	VALLECTS	60	16 1	0.26	1.01	-30.72	1.41	327.87 AMPS	326.20 AMPS	offpeak 2
(18)														
35213	VALLECTS	60	16	35214	SUNOL	60	16 1	0.30	1.04	-32.55	-1.40	338.34 AMPS	326.20 AMPS	offpeak 53
35213	VALLECTS	60	16	35214	SUNOL	60	16 1	0.30	1.04	-32.59	-1.38	338.87 AMPS	326.20 AMPS	offpeak 2
(19)														
35214	SUNOL	60	16	35216	DCTO JCT	60	16 1	0.39	1.13	-35.76	-2.80	367.58 AMPS	326.20 AMPS	offpeak 53
35214	SUNOL	60	16	35216	DCTO JCT	60	16 1	0.39	1.13	-35.81	-2.79	368.11 AMPS	326.20 AMPS	offpeak 2
(20)														
35216	DCTO JCT	60	16	35217	NEWARK	60	16 1	0.38	1.13	-36.42	-3.90	367.51 AMPS	326.20 AMPS	offpeak 53
35216	DCTO JCT	60	16	35217	NEWARK	60	16 1	0.38	1.13	-36.47	-3.89	368.04 AMPS	326.20 AMPS	offpeak 2
(21)														
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.01	76.39	1.92	747.80 AMPS	740.93 AMPS	offpeak 28
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.01	76.41	1.87	747.85 AMPS	740.93 AMPS	offpeak 40
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.01	76.50	1.64	748.06 AMPS	740.93 AMPS	offpeak 16
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.01	76.50	1.90	748.73 AMPS	740.93 AMPS	offpeak 62
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.01	76.71	1.89	751.26 AMPS	740.93 AMPS	offpeak 77
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.01	76.72	2.15	751.83 AMPS	740.93 AMPS	offpeak 20
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.01	76.75	1.92	751.33 AMPS	740.93 AMPS	offpeak 61
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.01	76.76	1.91	751.32 AMPS	740.93 AMPS	offpeak 60
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.02	77.00	2.12	754.55 AMPS	740.93 AMPS	offpeak 58
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.02	77.12	2.16	755.93 AMPS	740.93 AMPS	offpeak 69
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.02	77.25	2.16	758.05 AMPS	740.93 AMPS	offpeak 73
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.03	77.79	2.31	764.44 AMPS	740.93 AMPS	offpeak 72
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.05	79.57	1.30	780.00 AMPS	740.93 AMPS	offpeak 4
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.06	79.29	2.70	784.28 AMPS	740.93 AMPS	offpeak 54
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.08	81.88	0.82	803.19 AMPS	740.93 AMPS	offpeak 5
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.09	81.93	1.98	806.39 AMPS	740.93 AMPS	offpeak 56
35221	E DUBLIN	60	16	35223	PARKS TP	60	16 1	1.00	1.09	82.44	1.38	808.55 AMPS	740.93 AMPS	offpeak 6

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS:
OFFPEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus------				---------TO bus---------					loading p.u.(rate 3)			-------- outage ----(Rate 3)				contingecy	
bus	--name--	-kv-	-zn-	bus	---name--	-kv-	-zn-	-ID	base	outage	MW	MVAR	FLOW		RATING		number	
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.00	1.11	83.01	4.44	823.77	AMPS	740.93	AMPS	offpeak	59
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.00	1.11	83.16	4.34	824.93	AMPS	740.93	AMPS	offpeak	65
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.00	1.11	83.19	4.35	825.32	AMPS	740.93	AMPS	offpeak	8
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.00	1.12	84.14	2.12	830.90	AMPS	740.93	AMPS	offpeak	57
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.00	1.13	83.93	4.82	833.65	AMPS	740.93	AMPS	offpeak	14
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.00	1.21	91.27	-0.02	898.77	AMPS	740.93	AMPS	offpeak	55
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.00	1.43	101.30	14.55	1062.14	AMPS	740.93	AMPS	offpeak	13
(22)																		
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.01	0.00	43.49	43.49	MVA	43.00	MVA	offpeak	22
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.01	-0.00	43.43	43.43	MVA	43.00	MVA	offpeak	18
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.01	-0.00	43.54	43.54	MVA	43.00	MVA	offpeak	35
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.02	0.00	43.76	43.76	MVA	43.00	MVA	offpeak	70
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.02	0.00	43.88	43.88	MVA	43.00	MVA	offpeak	20
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.02	-0.00	43.96	43.96	MVA	43.00	MVA	offpeak	50
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.03	-0.00	44.16	44.16	MVA	43.00	MVA	offpeak	82
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.04	0.00	44.62	44.62	MVA	43.00	MVA	offpeak	15
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.05	-0.00	45.36	45.36	MVA	43.00	MVA	offpeak	78
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.07	-0.00	45.95	45.95	MVA	43.00	MVA	offpeak	69
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.08	-0.00	46.35	46.35	MVA	43.00	MVA	offpeak	68
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.19	0.00	51.26	51.26	MVA	43.00	MVA	offpeak	80
35907	PAUL SWT	115	19	36218	M	115	19	1	0.95	1.22	-0.00	52.64	52.64	MVA	43.00	MVA	offpeak	79
(23)																		
35911	LGNTSSW1	115	19	35914	NTVD SW1	115	19	1	0.20	1.06	89.17	14.34	429.08	AMPS	406.66	AMPS	offpeak	80

ATTACHMENTS 3C

YEAR 2002 SUMMER PEAK CASE
BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
PEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus--------				--------TO bus---------					loading p.u.(rate 3)------outage--------						(Rate 3)		contingency	
bus	--name--	-kv-	zn	bus	--name--	-kv-	zn	ID	base	outage	MW	MVAR	FLOW		RATING		number	
(1)																		
30526	PITSBURG	230	8	30561	TASSAJAR	230	8	1	0.75	1.03	427.76	92.32	1083.96	AMPS	1054.04	AMPS	peak_mec	56
(2)																		
30550	MORAGA	230	8	30555	SANRAMON	230	16	1	0.21	1.01	364.28	158.67	1011.50	AMPS	1000.07	AMPS	peak_mec	1
(3)																		
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.28	97.32	31.39	102.26	MVA	80.00	MVA	peak_mec	32
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.28	97.55	31.63	102.55	MVA	80.00	MVA	peak_mec	28
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.28	97.63	31.68	102.64	MVA	80.00	MVA	peak_mec	62
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.28	97.70	31.75	102.73	MVA	80.00	MVA	peak_mec	40
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.28	97.79	31.44	102.72	MVA	80.00	MVA	peak_mec	16
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.29	98.04	32.01	103.13	MVA	80.00	MVA	peak_mec	58
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.29	98.06	31.89	103.12	MVA	80.00	MVA	peak_mec	61
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.29	98.07	31.89	103.12	MVA	80.00	MVA	peak_mec	60
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.29	98.11	31.97	103.19	MVA	80.00	MVA	peak_mec	77
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.29	98.23	32.49	103.47	MVA	80.00	MVA	peak_mec	20
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.30	98.96	33.16	104.37	MVA	80.00	MVA	peak_mec	69
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.32	99.98	33.35	105.39	MVA	80.00	MVA	peak_mec	72
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.32	100.81	32.59	105.95	MVA	80.00	MVA	peak_mec	4
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.33	100.75	34.48	106.49	MVA	80.00	MVA	peak_mec	54
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.34	101.14	34.69	106.92	MVA	80.00	MVA	peak_mec	73
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.34	101.88	34.60	107.60	MVA	80.00	MVA	peak_mec	56
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.34	101.90	32.48	106.96	MVA	80.00	MVA	peak_mec	5
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.34	102.10	33.33	107.40	MVA	80.00	MVA	peak_mec	6
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.39	104.90	36.64	111.11	MVA	80.00	MVA	peak_mec	57
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.45	109.98	37.10	116.07	MVA	80.00	MVA	peak_mec	55
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.51	112.79	44.31	121.18	MVA	80.00	MVA	peak_mec	59
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.52	112.92	44.09	121.23	MVA	80.00	MVA	peak_mec	65
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.52	112.94	44.12	121.25	MVA	80.00	MVA	peak_mec	8
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	1.54	114.34	45.53	123.07	MVA	80.00	MVA	peak_mec	14
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	1.27	2.25	146.41	105.30	180.34	MVA	80.00	MVA	peak_mec	13
(4)																		
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.00	101.49	36.37	107.81	MVA	107.50	MVA	peak_mec	3
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.01	101.64	36.92	108.13	MVA	107.50	MVA	peak_mec	56
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.02	100.67	42.68	109.35	MVA	107.50	MVA	peak_mec	1
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.11	108.63	48.23	118.86	MVA	107.50	MVA	peak_mec	14
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.11	112.49	41.09	119.76	MVA	107.50	MVA	peak_mec	54
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.12	109.98	48.15	120.06	MVA	107.50	MVA	peak_mec	8
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.12	110.00	48.16	120.08	MVA	107.50	MVA	peak_mec	65
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.12	110.15	48.13	120.21	MVA	107.50	MVA	peak_mec	59
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.58	139.96	95.52	169.45	MVA	107.50	MVA	peak_mec	2
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.86	1.58	140.10	95.28	169.42	MVA	107.50	MVA	peak_mec	53
(5)																		
30628	NWRK 11M	13	16	30631	NEWARK E	230	16	1	0.53	1.15	508.19	156.14	531.64	MVA	463.70	MVA	peak_mec	54

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
PEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus--------				--------TO bus---------				loading p.u.(rate 3)------outage--------						(Rate 3)	contingency	
bus	--name--	-kv-	zn	bus	--name--	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	number	
(6)																
30705	MONTAVIS	230	17	35356	MNTA VSA	115	17	1	0.78	1.08	137.91	71.37	155.28 MVA	144.00 MVA	peak_mec	21
30705	MONTAVIS	230	17	35356	MNTA VSA	115	17	1	0.78	1.25	152.85	94.75	179.84 MVA	144.00 MVA	peak_mec	16
(7)																
30705	MONTAVIS	230	17	35356	MNTA VSA	115	17	2	0.70	1.12	153.04	95.79	180.55 MVA	161.30 MVA	peak_mec	16
(8)																
30730	HICKS	230	17	30735	METCALF	230	18	1	0.63	1.09	-541.01	2.29	1363.75 AMPS	1247.58 AMPS	peak_mec	72
(9)																
30735	METCALF	230	18	30736	MTCALF1M	230	18	1	0.85	1.12	435.03	118.37	1133.77 AMPS	1011.62 AMPS	peak_mec	54
30735	METCALF	230	18	30736	MTCALF1M	230	18	1	0.85	1.16	453.93	122.88	1172.62 AMPS	1011.62 AMPS	peak_mec	28
30735	METCALF	230	18	30736	MTCALF1M	230	18	1	0.85	1.19	459.38	104.32	1205.21 AMPS	1011.62 AMPS	peak_mec	73
(10)																
30735	METCALF	230	18	30738	MTCALF2M	230	18	1	0.85	1.12	435.89	118.36	1135.85 AMPS	1011.62 AMPS	peak_mec	54
30735	METCALF	230	18	30738	MTCALF2M	230	18	1	0.85	1.97	762.12	239.89	1995.31 AMPS	1011.62 AMPS	peak_mec	72
(11)																
30735	METCALF	230	18	30740	METC3 MP	230	18	1	0.77	1.02	395.28	114.18	1034.68 AMPS	1011.62 AMPS	peak_mec	54
30735	METCALF	230	18	30740	METC3 MP	230	18	1	0.77	1.06	412.46	118.57	1070.13 AMPS	1011.62 AMPS	peak_mec	28
30735	METCALF	230	18	30740	METC3 MP	230	18	1	0.77	1.09	417.70	101.70	1099.88 AMPS	1011.62 AMPS	peak_mec	73
(12)																
30738	MTCALF2M	230	18	35643	MTCALF 2	115	18	1	0.73	1.65	760.79	85.91	765.63 MVA	463.70 MVA	peak_mec	72
(13)																
30750	MOSSLND2	230	19	35921	MOSSLND2	115	19	1	0.50	1.06	472.93	129.79	490.42 MVA	463.70 MVA	peak_mec	81
30750	MOSSLND2	230	19	35921	MOSSLND2	115	19	1	0.50	1.17	527.79	128.96	543.31 MVA	463.70 MVA	peak_mec	42
(14)																
30757	MOSSLD2M	230	19	35922	MOSSLND1	115	19	1	0.57	1.01	155.54	29.57	158.33 MVA	157.50 MVA	peak_mec	52
30757	MOSSLD2M	230	19	35922	MOSSLND1	115	19	1	0.57	1.03	160.15	29.61	162.87 MVA	157.50 MVA	peak_mec	80
(15)																
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.92	1.01	93.82	56.24	525.54 AMPS	522.13 AMPS	peak_mec	20
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.92	1.02	94.72	56.44	530.33 AMPS	522.13 AMPS	peak_mec	69
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.92	1.02	96.78	53.89	534.58 AMPS	522.13 AMPS	peak_mec	54
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.92	1.04	98.79	53.74	542.60 AMPS	522.13 AMPS	peak_mec	57
(16)																
35109	NWRK 2 M	115	16	35120	NEWARK D	115	16	1	0.52	1.43	98.84	41.97	107.38 MVA	75.00 MVA	peak_mec	53
35109	NWRK 2 M	115	16	35120	NEWARK D	115	16	1	0.52	1.44	99.09	42.16	107.69 MVA	75.00 MVA	peak_mec	2
(17)																
35109	NWRK 2 M	115	16	35217	NEWARK	60	16	1	0.44	1.18	98.66	32.26	103.80 MVA	88.00 MVA	peak_mec	53
35109	NWRK 2 M	115	16	35217	NEWARK	60	16	1	0.44	1.18	98.91	32.38	104.08 MVA	88.00 MVA	peak_mec	2
(18)																
35203	LIVERMRE	60	16	35217	NEWARK	60	16	1	0.35	1.12	-35.18	-7.95	425.24 AMPS	378.16 AMPS	peak_mec	53
35203	LIVERMRE	60	16	35217	NEWARK	60	16	1	0.35	1.13	-35.28	7.93	427.00 AMPS	378.16 AMPS	peak_mec	2

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
PEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus--------				--------TO bus---------					loading p.u.(rate 3)------outage--------					(Rate 3)		contingency	
bus	--name--	-kv-	zn	bus	--name--	-kv-	zn	ID	base	outage	MW	MVAR	FLOW		RATING		number	
(19)																		
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.00	-83.30	-15.78	877.05	AMPS	875.65	AMPS	peak_mec	73
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.00	-84.33	-16.55	876.94	AMPS	875.65	AMPS	peak_mec	62
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.01	-84.44	-16.47	882.90	AMPS	875.65	AMPS	peak_mec	69
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.01	-85.10	-16.59	885.00	AMPS	875.65	AMPS	peak_mec	60
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.01	-85.10	-16.60	884.97	AMPS	875.65	AMPS	peak_mec	61
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.01	-85.13	-16.94	886.13	AMPS	875.65	AMPS	peak_mec	58
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.06	-87.99	-17.18	927.50	AMPS	875.65	AMPS	peak_mec	57
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.14	-96.71	-14.49	1001.58	AMPS	875.65	AMPS	peak_mec	3
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.15	-96.83	-14.72	1007.61	AMPS	875.65	AMPS	peak_mec	56
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.17	-95.81	-19.74	1021.55	AMPS	875.65	AMPS	peak_mec	1
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.27	-103.38	20.82	1110.75	AMPS	875.65	AMPS	peak_mec	14
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.27	-107.22	-13.57	1115.04	AMPS	875.65	AMPS	peak_mec	54
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.28	-104.68	-20.20	1121.37	AMPS	875.65	AMPS	peak_mec	8
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.28	-104.70	-20.22	1121.42	AMPS	875.65	AMPS	peak_mec	65
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.28	-104.84	-20.03	1123.99	AMPS	875.65	AMPS	peak_mec	59
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.84	-131.92	-35.64	1613.56	AMPS	875.65	AMPS	peak_mec	2
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.98	1.84	-132.07	-35.51	1612.27	AMPS	875.65	AMPS	peak_mec	53
(20)																		
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.03	73.07	14.80	760.75	AMPS	740.93	AMPS	peak_mec	62
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.03	73.18	14.84	762.22	AMPS	740.93	AMPS	peak_mec	60
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.03	73.18	14.84	762.23	AMPS	740.93	AMPS	peak_mec	61
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.03	73.22	14.93	762.90	AMPS	740.93	AMPS	peak_mec	58
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.08	74.48	15.69	800.61	AMPS	740.93	AMPS	peak_mec	8
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.08	74.50	15.70	800.68	AMPS	740.93	AMPS	peak_mec	65
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.08	74.63	15.53	802.77	AMPS	740.93	AMPS	peak_mec	59
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.08	76.27	14.10	797.96	AMPS	740.93	AMPS	peak_mec	56
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.11	79.13	13.90	822.92	AMPS	740.93	AMPS	peak_mec	3
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.15	81.21	13.72	849.70	AMPS	740.93	AMPS	peak_mec	54
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.17	80.82	16.24	868.23	AMPS	740.93	AMPS	peak_mec	14
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	1.31	91.34	18.68	973.57	AMPS	740.93	AMPS	peak_mec	1
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	2.38	144.69	38.88	1766.23	AMPS	740.93	AMPS	peak_mec	53
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	1.02	2.39	144.64	38.99	1768.85	AMPS	740.93	AMPS	peak_mec	2
(21)																		
35205	RADUM	60	16	35206	KAISER	60	16	1	0.86	1.00	-68.84	-2.86	744.63	AMPS	740.93	AMPS	peak_mec	14
35205	RADUM	60	16	35206	KAISER	60	16	1	0.86	1.15	-79.02	-3.85	850.51	AMPS	740.93	AMPS	peak_mec	1
35205	RADUM	60	16	35206	KAISER	60	16	1	0.86	2.19	-128.51	-7.83	1624.20	AMPS	740.93	AMPS	peak_mec	2
35205	RADUM	60	16	35206	KAISER	60	16	1	0.86	2.19	-128.57	-7.79	1621.89	AMPS	740.93	AMPS	peak_mec	53
(22)																		
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.30	121.08	3.75	1264.04	AMPS	971.87	AMPS	peak_mec	28
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.30	121.12	3.59	1262.76	AMPS	971.87	AMPS	peak_mec	23
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.30	121.12	3.59	1262.76	AMPS	971.87	AMPS	peak_mec	24
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.30	121.24	3.73	1266.17	AMPS	971.87	AMPS	peak_mec	40
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.30	121.38	3.52	1265.86	AMPS	971.87	AMPS	peak_mec	16
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.31	121.32	3.68	1268.36	AMPS	971.87	AMPS	peak_mec	77
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.31	121.66	3.77	1269.64	AMPS	971.87	AMPS	peak_mec	62
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.31	121.66	3.91	1273.96	AMPS	971.87	AMPS	peak_mec	20
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.31	121.77	3.25	1271.17	AMPS	971.87	AMPS	peak_mec	5
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.31	122.17	3.74	1275.45	AMPS	971.87	AMPS	peak_mec	61
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.31	122.17	3.74	1275.48	AMPS	971.87	AMPS	peak_mec	60

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
PEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus--------				--------TO bus---------					loading p.u.(rate 3)------outage--------						(Rate 3)		contingency	
bus	--name--	-kv-	zn	bus	--name--	-kv-	zn	ID	base	outage	MW	MVAR	FLOW		RATING		number	
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.31	122.18	3.94	1275.91	AMPS	971.87	AMPS	peak_mec	58
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.32	122.28	3.53	1285.16	AMPS	971.87	AMPS	peak_mec	72
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.32	122.30	3.93	1283.55	AMPS	971.87	AMPS	peak_mec	69
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.32	122.43	3.95	1279.48	AMPS	971.87	AMPS	peak_mec	4
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.32	122.96	3.61	1285.11	AMPS	971.87	AMPS	peak_mec	6
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.34	122.77	3.57	1298.65	AMPS	971.87	AMPS	peak_mec	73
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.35	124.44	3.16	1310.52	AMPS	971.87	AMPS	peak_mec	55
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.36	125.92	2.91	1319.17	AMPS	971.87	AMPS	peak_mec	3
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.38	126.43	3.83	1338.21	AMPS	971.87	AMPS	peak_mec	57
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.39	128.66	2.61	1353.76	AMPS	971.87	AMPS	peak_mec	56
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.44	132.38	1.95	1397.36	AMPS	971.87	AMPS	peak_mec	54
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.52	136.91	5.02	1476.35	AMPS	971.87	AMPS	peak_mec	65
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.52	136.91	5.03	1478.11	AMPS	971.87	AMPS	peak_mec	59
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.52	136.92	5.02	1476.54	AMPS	971.87	AMPS	peak_mec	8
35205	RADUM	60	16	35219	VINEYARD	60	16	1	1.29	1.61	144.31	4.95	1560.65	AMPS	971.87	AMPS	peak_mec	14
(23)																		
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.17	84.29	5.68	867.96	AMPS	740.93	AMPS	peak_mec	42
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.17	84.30	5.67	867.98	AMPS	740.93	AMPS	peak_mec	23
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.17	84.30	5.67	867.98	AMPS	740.93	AMPS	peak_mec	24
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.17	84.42	5.70	869.45	AMPS	740.93	AMPS	peak_mec	32
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.18	84.63	5.79	872.49	AMPS	740.93	AMPS	peak_mec	28
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.18	84.71	5.83	873.01	AMPS	740.93	AMPS	peak_mec	62
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.18	84.77	5.83	874.19	AMPS	740.93	AMPS	peak_mec	40
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.18	84.86	5.54	873.99	AMPS	740.93	AMPS	peak_mec	16
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.18	85.09	5.93	877.46	AMPS	740.93	AMPS	peak_mec	58
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.18	85.12	5.81	877.57	AMPS	740.93	AMPS	peak_mec	60
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.18	85.12	5.82	877.54	AMPS	740.93	AMPS	peak_mec	61
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.19	85.16	5.81	879.12	AMPS	740.93	AMPS	peak_mec	77
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.19	85.27	6.20	881.64	AMPS	740.93	AMPS	peak_mec	20
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.20	85.95	6.44	890.58	AMPS	740.93	AMPS	peak_mec	69
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.22	86.92	6.08	901.77	AMPS	740.93	AMPS	peak_mec	72
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.22	87.74	5.20	905.04	AMPS	740.93	AMPS	peak_mec	4
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.23	87.64	6.62	913.32	AMPS	740.93	AMPS	peak_mec	54
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.23	88.79	4.61	914.89	AMPS	740.93	AMPS	peak_mec	5
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.24	88.00	6.57	918.56	AMPS	740.93	AMPS	peak_mec	73
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.24	88.73	6.35	921.53	AMPS	740.93	AMPS	peak_mec	56
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.24	88.97	5.31	917.68	AMPS	740.93	AMPS	peak_mec	6
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.29	91.58	6.63	956.00	AMPS	740.93	AMPS	peak_mec	57
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.35	96.45	4.75	1001.36	AMPS	740.93	AMPS	peak_mec	55
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.42	98.97	9.03	1052.00	AMPS	740.93	AMPS	peak_mec	59
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.42	99.11	8.81	1052.15	AMPS	740.93	AMPS	peak_mec	65
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.42	99.12	8.83	1052.44	AMPS	740.93	AMPS	peak_mec	8
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	1.44	100.43	9.28	1069.11	AMPS	740.93	AMPS	peak_mec	14
35205	RADUM	60	16	35223	PARKS TP	60	16	1	1.17	2.19	128.65	28.40	1625.26	AMPS	740.93	AMPS	peak_mec	13
(24)																		
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	1.01	-69.36	-8.74	750.17	AMPS	740.93	AMPS	peak_mec	8
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	1.01	-69.37	-8.76	750.25	AMPS	740.93	AMPS	peak_mec	65
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	1.01	-71.15	-7.18	749.36	AMPS	740.93	AMPS	peak_mec	56
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	1.02	-69.51	-8.56	752.34	AMPS	740.93	AMPS	peak_mec	59
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	1.05	-73.96	-6.73	774.79	AMPS	740.93	AMPS	peak_mec	3
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	1.08	75.98	-6.29	801.43	AMPS	740.93	AMPS	peak_mec	54

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
PEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus--------				--------TO bus---------				loading p.u.(rate 3)------outage--------						(Rate 3)		contingency	
bus	--name--	-kv-	zn	bus	--name--	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING		number	
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	1.10	-75.55	-8.62	818.00 AMPS	740.93	AMPS	peak_mec	14
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	1.25	-85.81	-9.90	923.66 AMPS	740.93	AMPS	peak_mec	1
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	2.31	-136.26	-17.17	1710.46 AMPS	740.93	AMPS	peak_mec	2
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.96	2.31	-136.32	-17.11	1707.96 AMPS	740.93	AMPS	peak_mec	53
(25)																	
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.32	96.74	16.07	979.53 AMPS	740.93	AMPS	peak_mec	42
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.32	96.75	16.06	979.54 AMPS	740.93	AMPS	peak_mec	23
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.32	96.75	16.06	979.54 AMPS	740.93	AMPS	peak_mec	24
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.32	96.87	16.11	981.05 AMPS	740.93	AMPS	peak_mec	32
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.33	97.10	16.26	984.19 AMPS	740.93	AMPS	peak_mec	28
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.33	97.18	16.30	984.68 AMPS	740.93	AMPS	peak_mec	62
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.33	97.24	16.32	985.93 AMPS	740.93	AMPS	peak_mec	40
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.33	97.33	16.03	985.56 AMPS	740.93	AMPS	peak_mec	16
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.34	97.58	16.48	989.20 AMPS	740.93	AMPS	peak_mec	58
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.34	97.60	16.37	989.24 AMPS	740.93	AMPS	peak_mec	61
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.34	97.61	16.36	989.27 AMPS	740.93	AMPS	peak_mec	60
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.34	97.65	16.39	990.97 AMPS	740.93	AMPS	peak_mec	77
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.34	97.77	16.83	993.69 AMPS	740.93	AMPS	peak_mec	20
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.35	98.48	17.22	1002.87 AMPS	740.93	AMPS	peak_mec	69
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.37	99.50	17.05	1014.18 AMPS	740.93	AMPS	peak_mec	72
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.37	100.32	16.22	1016.73 AMPS	740.93	AMPS	peak_mec	4
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.39	100.26	17.80	1026.26 AMPS	740.93	AMPS	peak_mec	54
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.39	100.64	17.85	1031.68 AMPS	740.93	AMPS	peak_mec	73
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.39	101.41	15.80	1026.41 AMPS	740.93	AMPS	peak_mec	5
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.39	101.60	16.55	1029.37 AMPS	740.93	AMPS	peak_mec	6
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.40	101.38	17.67	1034.06 AMPS	740.93	AMPS	peak_mec	56
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.44	104.36	18.58	1069.11 AMPS	740.93	AMPS	peak_mec	57
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.50	109.40	17.54	1113.69 AMPS	740.93	AMPS	peak_mec	55
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.58	112.15	22.86	1167.20 AMPS	740.93	AMPS	peak_mec	59
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.58	112.28	22.64	1167.21 AMPS	740.93	AMPS	peak_mec	65
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.58	112.30	22.66	1167.51 AMPS	740.93	AMPS	peak_mec	8
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	1.60	113.68	23.45	1184.48 AMPS	740.93	AMPS	peak_mec	14
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	1.32	2.38	144.95	57.06	1759.94 AMPS	740.93	AMPS	peak_mec	13
(26)																	
35212	IUKA	60	16	35213	VALLECTS	60	16	1	0.59	1.73	-44.93	1.87	564.72 AMPS	326.20	AMPS	peak_mec	53
35212	IUKA	60	16	35213	VALLECTS	60	16	1	0.59	1.74	-44.99	1.90	566.55 AMPS	326.20	AMPS	peak_mec	2
35212	IUKA	60	16	35213	VALLECTS	60	16	1	0.59	1.91	-48.44	-0.13	623.52 AMPS	326.20	AMPS	peak_mec	13
(27)																	
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.62	1.77	-48.47	-4.96	578.00 AMPS	326.20	AMPS	peak_mec	53
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.62	1.78	-48.55	-4.97	579.85 AMPS	326.20	AMPS	peak_mec	2
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.62	1.95	-52.52	-8.26	637.50 AMPS	326.20	AMPS	peak_mec	13
(28)																	
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.75	1.92	-53.75	-8.01	626.29 AMPS	326.20	AMPS	peak_mec	53
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.75	1.93	-53.84	-8.03	628.22 AMPS	326.20	AMPS	peak_mec	2
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.75	2.10	-58.06	-11.79	686.07 AMPS	326.20	AMPS	peak_mec	13

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
PEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus--------				--------TO bus---------					loading p.u.(rate 3)------outage--------						(Rate 3)		contingency	
bus	--name--	-kv-	zn	bus	--name--	-kv-	zn	ID	base	outage	MW	MVAR	FLOW		RATING		number	
(29)																		
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.75	1.92	-55.67	-11.33	626.19	AMPS	326.20	AMPS	peak_mec	53
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.75	1.93	-55.76	-11.38	628.11	AMPS	326.20	AMPS	peak_mec	2
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.75	2.10	-60.35	-15.79	685.94	AMPS	326.20	AMPS	peak_mec	13
(30)																		
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.23	88.30	7.13	908.14	AMPS	740.93	AMPS	peak_mec	42
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.23	88.31	7.12	908.16	AMPS	740.93	AMPS	peak_mec	23
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.23	88.31	7.12	908.16	AMPS	740.93	AMPS	peak_mec	24
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.23	88.43	7.15	909.64	AMPS	740.93	AMPS	peak_mec	32
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.23	88.64	7.25	912.71	AMPS	740.93	AMPS	peak_mec	28
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.23	88.72	7.28	913.23	AMPS	740.93	AMPS	peak_mec	62
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.23	88.78	7.28	914.43	AMPS	740.93	AMPS	peak_mec	40
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.23	88.88	6.99	914.17	AMPS	740.93	AMPS	peak_mec	16
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.24	89.11	7.39	917.71	AMPS	740.93	AMPS	peak_mec	58
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.24	89.13	7.28	917.77	AMPS	740.93	AMPS	peak_mec	61
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.24	89.14	7.27	917.80	AMPS	740.93	AMPS	peak_mec	60
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.24	89.17	7.27	919.40	AMPS	740.93	AMPS	peak_mec	77
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.24	89.28	7.67	922.00	AMPS	740.93	AMPS	peak_mec	20
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.26	89.97	7.92	931.02	AMPS	740.93	AMPS	peak_mec	69
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.27	90.94	7.58	942.26	AMPS	740.93	AMPS	peak_mec	72
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.28	91.76	6.70	945.26	AMPS	740.93	AMPS	peak_mec	4
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.29	91.67	8.13	954.00	AMPS	740.93	AMPS	peak_mec	54
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.29	92.03	8.09	959.31	AMPS	740.93	AMPS	peak_mec	73
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.29	92.82	6.12	955.06	AMPS	740.93	AMPS	peak_mec	5
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.29	93.00	6.83	957.91	AMPS	740.93	AMPS	peak_mec	6
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.30	92.76	7.88	962.06	AMPS	740.93	AMPS	peak_mec	56
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.35	95.62	8.21	996.75	AMPS	740.93	AMPS	peak_mec	57
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.41	100.50	6.41	1041.82	AMPS	740.93	AMPS	peak_mec	55
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.48	103.05	10.78	1093.51	AMPS	740.93	AMPS	peak_mec	59
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.48	103.18	10.57	1093.61	AMPS	740.93	AMPS	peak_mec	65
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.48	103.20	10.58	1093.91	AMPS	740.93	AMPS	peak_mec	8
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	1.50	104.51	11.06	1110.69	AMPS	740.93	AMPS	peak_mec	14
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	1.22	2.26	133.00	31.50	1673.92	AMPS	740.93	AMPS	peak_mec	13
(31)																		
35612	TRIMBLE	115	18	35613	GISH JCT	115	18	1	0.05	1.31	-194.14	61.59	1046.31	AMPS	798.25	AMPS	peak_mec	54
(32)																		
35613	GISH JCT	115	18	35616	SJ B E	115	18	1	0.04	1.33	-198.21	55.54	1059.86	AMPS	798.25	AMPS	peak_mec	54
(33)																		
35618	SN JSE A	115	18	35619	SJ B F	115	18	1	0.49	1.13	228.93	33.72	1192.44	AMPS	1054.29	AMPS	peak_mec	54
(34)																		
35620	EL PATIO	115	18	35621	IBM-HR J	115	18	1	0.66	1.02	188.58	3.11	969.08	AMPS	948.86	AMPS	peak_mec	54
(35)																		
35620	EL PATIO	115	18	35651	BAILY J3	115	18	1	0.66	1.02	-189.17	3.25	972.12	AMPS	948.86	AMPS	peak_mec	54
(36)																		
35621	IBM-HR J	115	18	35642	MTCALF 1	115	18	1	0.66	1.02	-193.08	-17.99	968.91	AMPS	948.86	AMPS	peak_mec	54

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
PEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

--------FROM bus--------				--------TO bus---------				loading p.u.(rate 3)------outage--------						(Rate 3)		contingency	
bus	--name--	-kv-	zn	bus	--name--	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING		number	
(37)																	
35642	MTCALF 1	115	18	35651	BAILY J3	115	18	1	0.66	1.02	195.16	24.85	971.80 AMPS	948.86	AMPS	peak_mec	54
(38)																	
35654	MORGN J1	115	18	35901	GRN VLY1	115	19	1	0.12	1.53	125.16	-7.28	620.20 AMPS	406.66	AMPS	peak_mec	77
(39)																	
35911	LGNTSSW1	115	19	35914	NTVD SW1	115	19	1	0.31	1.69	137.61	20.31	685.56 AMPS	406.66	AMPS	peak_mec	80
(40)																	
35911	LGNTSSW1	115	19	35915	PRNDL J1	115	19	1	0.34	1.35	150.16	-19.43	746.24 AMPS	552.25	AMPS	peak_mec	80
(41)																	
35914	NTVD SW1	115	19	35920	SALINAS1	115	19	1	0.13	1.41	113.45	13.23	574.23 AMPS	406.66	AMPS	peak_mec	80
(42)																	
35915	PRNDL J1	115	19	35922	MOSSLND1	115	19	1	0.45	1.35	151.85	-24.09	746.03 AMPS	552.25	AMPS	peak_mec	80
(43)																	
35917	PRNDL J2	115	19	35921	MOSSLND2	115	19	1	0.51	1.01	-113.75	-10.05	559.30 AMPS	552.25	AMPS	peak_mec	81
(44)																	
35918	SALINAS2	115	19	35928	DOLAN J2	115	19	1	0.48	1.13	-123.34	-16.71	624.30 AMPS	552.25	AMPS	peak_mec	81
(45)																	
35921	MOSSLND2	115	19	35922	MOSSLND1	115	19	1	0.14	1.02	-254.73	-32.04	1223.08 AMPS	1199.89	AMPS	peak_mec	43
35921	MOSSLND2	115	19	35922	MOSSLND1	115	19	1	0.14	1.10	272.37	39.92	1318.01 AMPS	1199.89	AMPS	peak_mec	42

Attachment 3 - Power Flow Results

ATTACHMENTS 3D:
BRANCH LOADING FLAGS:
PEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-----FROM bus--------				--------TO bus--- -----				loading p.u.(rate 3)		--------- outage ---------			(Rate 3)	contingency	
bus	--name--	-kv-	zn	bus	--name--	- kv-zn	ID	base	outage	MW	MVAR	FLOW	RATING	number	
(1)															
30435	LAKEVILE	230	2	31255	LAKEVLLE	115 2	1	1.02	1.02	144.08	30.86	147.34 MVA	144.00 MVA	peak	53
(2)															
30526	PITSBURG	230	8	30561	TASSAJAR	230 8	1	0.78	1.09	452.80	101.67	1150.78 AMPS	1054.04 AMPS	peak	56
(3)															
30550	MORAGA	230	8	30555	SANRAMON	230 16	1	0.21	1.02	365.81	159.82	1018.39 AMPS	1000.07 AMPS	peak	1
(4)															
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.30	98.86	32.47	104.06 MVA	80.00 MVA	peak	26
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.30	98.97	32.13	104.05 MVA	80.00 MVA	peak	43
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.30	99.03	32.16	104.12 MVA	80.00 MVA	peak	42
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.30	99.08	32.63	104.32 MVA	80.00 MVA	peak	23
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.30	99.08	32.63	104.32 MVA	80.00 MVA	peak	24
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.30	99.35	31.95	104.36 MVA	80.00 MVA	peak	16
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.31	99.35	32.44	104.52 MVA	80.00 MVA	peak	40
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.31	99.36	32.51	104.55 MVA	80.00 MVA	peak	28
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.31	99.37	32.63	104.59 MVA	80.00 MVA	peak	62
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.31	99.74	32.97	105.05 MVA	80.00 MVA	peak	20
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.31	99.80	32.88	105.07 MVA	80.00 MVA	peak	58
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.31	99.84	32.71	105.06 MVA	80.00 MVA	peak	60
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.31	99.84	32.72	105.06 MVA	80.00 MVA	peak	61
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.32	100.28	33.38	105.70 MVA	80.00 MVA	peak	69
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.32	100.38	33.49	105.82 MVA	80.00 MVA	peak	77
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.34	101.14	34.70	106.92 MVA	80.00 MVA	peak	73
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.34	101.70	34.65	107.44 MVA	80.00 MVA	peak	72
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.34	101.99	33.39	107.32 MVA	80.00 MVA	peak	4
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.35	102.20	35.94	108.33 MVA	80.00 MVA	peak	54
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.37	103.83	35.57	109.75 MVA	80.00 MVA	peak	56
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.37	103.98	33.90	109.36 MVA	80.00 MVA	peak	5
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.37	104.21	34.44	109.76 MVA	80.00 MVA	peak	6
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.42	107.18	38.23	113.80 MVA	80.00 MVA	peak	57
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.48	112.27	38.45	118.67 MVA	80.00 MVA	peak	55
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.53	113.77	45.16	122.40 MVA	80.00 MVA	peak	59
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.53	113.88	44.80	122.37 MVA	80.00 MVA	peak	65
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.53	113.90	44.84	122.40 MVA	80.00 MVA	peak	8
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	1.55	115.23	46.29	124.18 MVA	80.00 MVA	peak	14
30555	SANRAMON	230	16	35209	SAN RAMN	60 16	1	1.29	2.27	147.39	106.74	181.98 MVA	80.00 MVA	peak	13
(5)															
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.02	101.00	42.65	109.63 MVA	107.50 MVA	peak	1
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.02	103.39	36.35	109.59 MVA	107.50 MVA	peak	3
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.02	103.52	37.27	110.03 MVA	107.50 MVA	peak	56
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.10	107.81	48.10	118.05 MVA	107.50 MVA	peak	14
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.11	109.09	48.02	119.19 MVA	107.50 MVA	peak	8
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.11	109.11	48.03	119.21 MVA	107.50 MVA	peak	65
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.11	109.24	47.97	119.31 MVA	107.50 MVA	peak	59
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.15	115.57	42.61	123.17 MVA	107.50 MVA	peak	54
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.59	140.92	97.27	171.23 MVA	107.50 MVA	peak	2
30585	LS PSTAS	230	16	35220	LPOSTAS	60 16	1	0.86	1.59	141.04	96.79	171.06 MVA	107.50 MVA	peak	53

Attachment 3 - Power Flow Results

PEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-----FROM bus--------				--------TO bus--- -----				loading p.u.(rate 3)		--------- outage ---------			(Rate 3)	contingency	
bus	--name--	-kv-	zn	bus	--name--	- kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	number
(6)															
30628	NWRK 11M	13	16	30631	NEWARK E	230	16	11	0.55	1.15	508.85	155.82	532.17 MVA	463.70 MVA	peak 54
(7)															
30705	MONTAVIS	230	17	35356	MNTA VSA	115	17	1	0.72	1.16	139.95	90.70	166.77 MVA	144.00 MVA	peak 16
(8)															
30705	MONTAVIS	230	17	35356	MNTA VSA	115	17	2	0.65	1.04	140.10	91.64	167.41 MVA	161.30 MVA	peak 16
(9)															
30730	HICKS	230	17	30735	METCALF	230	18	1	0.61	1.05	-512.05	7.49	1305.25 AMPS	1247.58 AMPS	peak 72
(10)															
30735	METCALF	230	18	30736	MTCALF1M	230	18	1	0.80	1.08	421.65	109.61	1096.99 AMPS	1011.62 AMPS	peak 28
30735	METCALF	230	18	30736	MTCALF1M	230	18	1	0.80	1.09	417.07	113.69	1101.78 AMPS	1011.62 AMPS	peak 54
30735	METCALF	230	18	30736	MTCALF1M	230	18	1	0.80	1.19	459.38	104.32	1205.22 AMPS	1011.62 AMPS	peak 73
(11)															
30735	METCALF	230	18	30738	MTCALF2M	230	18	1	0.80	1.09	417.90	113.68	1103.80 AMPS	1011.62 AMPS	peak 54
30735	METCALF	230	18	30738	MTCALF2M	230	18	1	0.80	1.84	704.09	217.07	1862.30 AMPS	1011.62 AMPS	peak 72
(12)															
30735	METCALF	230	18	30740	METC3 MP	230	18	1	0.73	1.09	417.70	101.71	1099.88 AMPS	1011.62 AMPS	peak 73
(13)															
30738	MTCALF2M	230	18	35643	MTCALF 2	115	18	1	0.69	1.53	702.94	82.94	707.81 MVA	463.70 MVA	peak 72
(14)															
30750	MOSSLND2	230	19	35921	MOSSLND2	115	19	1	0.51	1.08	484.67	128.95	501.53 MVA	463.70 MVA	peak 81
30750	MOSSLND2	230	19	35921	MOSSLND2	115	19	1	0.51	1.22	549.66	129.65	564.75 MVA	463.70 MVA	peak 42
(15)															
30757	MOSSLD2M	230	19	35922	MOSSLND1	115	19	1	0.58	1.04	161.18	27.85	163.57 MVA	157.50 MVA	peak 52
30757	MOSSLD2M	230	19	35922	MOSSLND1	115	19	1	0.58	1.06	165.49	24.79	167.34 MVA	157.50 MVA	peak 80
(16)															
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.94	1.00	93.22	55.89	522.13 AMPS	522.13 AMPS	peak 68
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.94	1.02	95.24	56.14	531.99 AMPS	522.13 AMPS	peak 20
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.94	1.02	95.88	56.11	534.76 AMPS	522.13 AMPS	peak 69
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.94	1.03	101.80	44.82	539.68 AMPS	522.13 AMPS	peak 54
33310	SANMATEO	115	10	33312	BELMONT	115	10	1	0.94	1.04	101.50	46.71	541.38 AMPS	522.13 AMPS	peak 57
(17)															
35109	NWRK 2 M	115	16	35120	NEWARK D	115	16	1	0.49	1.43	98.22	42.85	107.16 MVA	75.00 MVA	peak 53
35109	NWRK 2 M	115	16	35120	NEWARK D	115	16	1	0.49	1.43	98.54	43.17	107.58 MVA	75.00 MVA	peak 2
(18)															
35109	NWRK 2 M	115	16	35217	NEWARK	60	16	1	0.41	1.18	98.04	33.11	103.48 MVA	88.00 MVA	peak 53
35109	NWRK 2 M	115	16	35217	NEWARK	60	16	1	0.41	1.18	98.36	33.33	103.86 MVA	88.00 MVA	peak 2
(19)															
35203	LIVERMRE	60	16	35217	NEWARK	60	16	1	0.32	1.12	-34.76	-8.40	424.97 AMPS	378.16 AMPS	peak 53
35203	LIVERMRE	60	16	35217	NEWARK	60	16	1	0.32	1.13	-34.87	-8.39	427.48 AMPS	378.16 AMPS	peak 2

Attachment 3 - Power Flow Results

PEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-----FROM bus--------				--------TO bus--- -----				loading p.u.(rate 3)		--------- outage ---------				(Rate 3)		contingency
bus	--name--	-kv-	zn	bus	--name--	- kv-zn	ID	base	outage	MW	MVAR	FLOW		RATING		number
(20)																
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.00	-83.30	-15.78	877.06	AMPS	875.65	AMPS peak	73
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.00	-83.60	-15.64	879.23	AMPS	875.65	AMPS peak	72
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.00	-83.69	-17.45	876.28	AMPS	875.65	AMPS peak	4
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.01	-84.48	-16.23	883.49	AMPS	875.65	AMPS peak	69
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.01	-84.53	-16.24	881.79	AMPS	875.65	AMPS peak	62
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.02	-85.37	-16.26	890.12	AMPS	875.65	AMPS peak	61
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.02	-85.38	-16.25	890.15	AMPS	875.65	AMPS peak	60
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.02	-85.43	-16.58	891.53	AMPS	875.65	AMPS peak	58
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.07	-88.25	-16.62	934.85	AMPS	875.65	AMPS peak	57
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.16	-98.53	-13.60	1019.70	AMPS	875.65	AMPS peak	3
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.17	96.11	19.38	1027.65	AMPS	875.65	AMPS peak	1
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.17	98.62	14.04	1028.60	AMPS	875.65	AMPS peak	56
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.26	102.58	20.89	1106.31	AMPS	875.65	AMPS peak	14
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.27	103.81	20.32	1116.04	AMPS	875.65	AMPS peak	8
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.27	103.83	20.33	1116.10	AMPS	875.65	AMPS peak	65
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.28	-103.95	-20.08	1119.11	AMPS	875.65	AMPS peak	59
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.32	-110.12	-13.05	1152.47	AMPS	875.65	AMPS peak	54
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.87	-132.73	-35.52	1637.46	AMPS	875.65	AMPS peak	2
35203	LIVERMRE	60	16	35220	LPOSTAS	60 16	1	0.99	1.87	-132.87	-35.33	1633.89	AMPS	875.65	AMPS peak	53
(21)																
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.02	72.31	14.74	756.01	AMPS	740.93	AMPS peak	62
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.02	72.43	14.83	757.24	AMPS	740.93	AMPS peak	60
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.02	72.43	14.83	757.26	AMPS	740.93	AMPS peak	61
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.02	72.49	14.88	758.13	AMPS	740.93	AMPS peak	58
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.07	73.67	15.78	794.88	AMPS	740.93	AMPS peak	8
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.07	73.68	15.80	794.96	AMPS	740.93	AMPS peak	65
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.08	73.80	15.57	797.28	AMPS	740.93	AMPS peak	59
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.08	76.07	13.98	798.61	AMPS	740.93	AMPS peak	56
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.11	79.33	13.77	825.41	AMPS	740.93	AMPS peak	3
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.16	80.01	16.31	862.97	AMPS	740.93	AMPS peak	14
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.16	81.75	13.45	861.05	AMPS	740.93	AMPS peak	54
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	1.31	90.74	18.65	970.99	AMPS	740.93	AMPS peak	1
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	2.41	145.06	39.14	1785.61	AMPS	740.93	AMPS peak	53
35203	LIVERMRE	60	16	35222	CALMAT60	60 16	1	1.01	2.42	145.03	39.33	1790.91	AMPS	740.93	AMPS peak	2
(22)																
35205	RADUM	60	16	35206	KAISER	60 16	1	0.85	1.00	-69.79	-0.15	742.11	AMPS	740.93	AMPS peak	54
35205	RADUM	60	16	35206	KAISER	60 16	1	0.85	1.14	-78.43	-3.86	847.40	AMPS	740.93	AMPS peak	1
35205	RADUM	60	16	35206	KAISER	60 16	1	0.85	2.21	-128.83	7.54	1640.05	AMPS	740.93	AMPS peak	53
(23)																
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.31	121.95	3.45	1277.73	AMPS	971.87	AMPS peak	26
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.31	121.96	3.43	1277.91	AMPS	971.87	AMPS peak	28
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.31	122.12	3.16	1276.11	AMPS	971.87	AMPS peak	16
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.32	122.04	3.40	1278.14	AMPS	971.87	AMPS peak	40
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.32	122.06	3.40	1279.75	AMPS	971.87	AMPS peak	23
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.32	122.06	3.40	1279.75	AMPS	971.87	AMPS peak	24
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.32	122.36	3.55	1283.80	AMPS	971.87	AMPS peak	20
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.32	122.50	3.50	1283.50	AMPS	971.87	AMPS peak	62
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.33	122.43	3.41	1288.27	AMPS	971.87	AMPS peak	77
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.33	122.76	3.01	1288.46	AMPS	971.87	AMPS peak	5
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.33	122.89	3.54	1290.79	AMPS	971.87	AMPS peak	69

Attachment 3 - Power Flow Results

PEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-----FROM bus--------				-------TO bus--- -----				loading p.u.(rate 3)		--------- outage ---------			(Rate 3) contingency		
bus	--name--	-kv-	zn	bus	--name--	- kv-zn	ID	base	outage	MW	MVAR	FLOW	RATING		number
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.33	123.06	3.40	1289.08 AMPS	971.87 AMPS	peak	61
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.33	123.06	3.40	1289.10 AMPS	971.87 AMPS	peak	60
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.33	123.07	3.61	1289.73 AMPS	971.87 AMPS	peak	58
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.33	123.35	3.62	1293.64 AMPS	971.87 AMPS	peak	4
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.34	122.77	3.57	1298.65 AMPS	971.87 AMPS	peak	73
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.34	123.15	3.34	1301.55 AMPS	971.87 AMPS	peak	72
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.34	123.96	3.26	1300.32 AMPS	971.87 AMPS	peak	6
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.37	125.53	2.76	1327.05 AMPS	971.87 AMPS	peak	55
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.37	127.14	2.23	1332.96 AMPS	971.87 AMPS	peak	3
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.40	127.52	3.46	1358.14 AMPS	971.87 AMPS	peak	57
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.42	130.24	2.07	1375.29 AMPS	971.87 AMPS	peak	56
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.47	134.18	1.70	1426.93 AMPS	971.87 AMPS	peak	54
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.52	136.97	5.00	1481.60 AMPS	971.87 AMPS	peak	65
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.52	136.97	5.00	1481.78 AMPS	971.87 AMPS	peak	8
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.53	136.97	5.03	1484.36 AMPS	971.87 AMPS	peak	59
35205	RADUM	60	16	35219	VINEYARD	60 16	1	1.31	1.61	144.31	4.96	1566.10 AMPS	971.87 AMPS	peak	14
(24)															
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.20	85.87	5.87	888.24 AMPS	740.93 AMPS	peak	26
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.20	85.97	5.55	888.08 AMPS	740.93 AMPS	peak	43
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.20	86.04	5.54	888.81 AMPS	740.93 AMPS	peak	42
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.20	86.08	5.89	890.99 AMPS	740.93 AMPS	peak	23
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.20	86.08	5.89	890.99 AMPS	740.93 AMPS	peak	24
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.20	86.34	5.24	890.80 AMPS	740.93 AMPS	peak	16
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.20	86.34	5.63	892.72 AMPS	740.93 AMPS	peak	40
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.21	86.35	5.67	893.17 AMPS	740.93 AMPS	peak	28
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.21	86.35	5.79	893.21 AMPS	740.93 AMPS	peak	62
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.21	86.70	5.89	897.96 AMPS	740.93 AMPS	peak	20
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.21	86.76	5.83	897.52 AMPS	740.93 AMPS	peak	58
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.21	86.80	5.66	897.64 AMPS	740.93 AMPS	peak	60
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.21	86.80	5.67	897.61 AMPS	740.93 AMPS	peak	61
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.22	87.22	6.00	904.22 AMPS	740.93 AMPS	peak	69
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.22	87.30	5.97	906.69 AMPS	740.93 AMPS	peak	77
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.24	88.00	6.57	918.56 AMPS	740.93 AMPS	peak	73
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.24	88.85	5.26	919.55 AMPS	740.93 AMPS	peak	4
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.25	88.54	6.29	923.44 AMPS	740.93 AMPS	peak	72
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.26	88.98	7.02	933.88 AMPS	740.93 AMPS	peak	54
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.27	90.57	6.20	943.67 AMPS	740.93 AMPS	peak	56
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.27	90.74	4.76	939.77 AMPS	740.93 AMPS	peak	5
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.27	90.97	5.22	941.44 AMPS	740.93 AMPS	peak	6
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.33	93.73	6.72	984.01 AMPS	740.93 AMPS	peak	57
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.39	98.60	4.67	1027.38 AMPS	740.93 AMPS	peak	55
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.44	99.88	9.10	1065.42 AMPS	740.93 AMPS	peak	59
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.44	99.99	8.80	1064.63 AMPS	740.93 AMPS	peak	65
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.44	100.01	8.82	1064.92 AMPS	740.93 AMPS	peak	8
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	1.46	101.25	9.32	1081.36 AMPS	740.93 AMPS	peak	14
35205	RADUM	60	16	35223	PARKS TP	60 16	1	1.19	2.22	129.47	28.21	1643.76 AMPS	740.93 AMPS	peak	13
(25)															
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	1.00	-68.56	-8.89	744.19 AMPS	740.93 AMPS	peak	8
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	1.00	-68.57	-8.90	744.27 AMPS	740.93 AMPS	peak	65
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	1.01	-68.69	-8.65	746.59 AMPS	740.93 AMPS	peak	59
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	1.01	-70.95	-7.06	749.86 AMPS	740.93 AMPS	peak	56
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	1.05	-74.15	-6.58	777.31 AMPS	740.93 AMPS	peak	3

Attachment 3 - Power Flow Results

PEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-----FROM bus--------				--------TO bus--- -----				loading p.u.(rate 3)		--------- outage ---------				(Rate 3) contingency		
bus	--name--	-kv-	zn	bus	--name--	- kv-zn	ID	base	outage	MW	MVAR	FLOW		RATING		number
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	1.10	-74.76	-8.74	812.49	AMPS	740.93	AMPS peak	14
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	1.10	-76.50	-5.90	812.58	AMPS	740.93	AMPS peak	54
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	1.24	-85.22	-9.90	920.86	AMPS	740.93	AMPS peak	1
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	2.33	-136.61	-16.97	1726.84	AMPS	740.93	AMPS peak	53
35206	KAISER	60	16	35222	CALMAT60	60 16	1	0.95	2.34	-136.55	-17.04	1731.94	AMPS	740.93	AMPS peak	2
(26)																
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.35	98.39	16.60	1000.32	AMPS	740.93	AMPS peak	26
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.35	98.50	16.28	999.98	AMPS	740.93	AMPS peak	43
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.35	98.56	16.28	1000.72	AMPS	740.93	AMPS peak	42
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.35	98.61	16.68	1003.14	AMPS	740.93	AMPS peak	23
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.35	98.61	16.68	1003.14	AMPS	740.93	AMPS peak	24
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.35	98.87	16.01	1002.54	AMPS	740.93	AMPS peak	16
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.36	98.88	16.44	1004.72	AMPS	740.93	AMPS peak	40
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.36	98.89	16.50	1005.24	AMPS	740.93	AMPS peak	28
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.36	98.89	16.61	1005.27	AMPS	740.93	AMPS peak	62
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.36	99.26	16.80	1010.18	AMPS	740.93	AMPS peak	20
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.36	99.32	16.73	1009.59	AMPS	740.93	AMPS peak	58
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.36	99.36	16.56	1009.63	AMPS	740.93	AMPS peak	61
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.36	99.36	16.56	1009.66	AMPS	740.93	AMPS peak	60
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.37	99.80	17.02	1016.55	AMPS	740.93	AMPS peak	69
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.38	99.89	17.03	1019.22	AMPS	740.93	AMPS peak	77
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.39	100.64	17.85	1031.69	AMPS	740.93	AMPS peak	73
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.39	101.49	16.54	1031.62	AMPS	740.93	AMPS peak	4
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.40	101.20	17.66	1036.44	AMPS	740.93	AMPS peak	72
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.41	101.68	18.59	1047.63	AMPS	740.93	AMPS peak	54
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.42	103.46	16.40	1051.86	AMPS	740.93	AMPS peak	5
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.42	103.69	16.89	1053.49	AMPS	740.93	AMPS peak	6
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.43	103.30	17.92	1056.55	AMPS	740.93	AMPS peak	56
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.48	106.62	19.21	1097.77	AMPS	740.93	AMPS peak	57
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.54	111.66	17.96	1140.09	AMPS	740.93	AMPS peak	55
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.59	113.11	23.21	1181.02	AMPS	740.93	AMPS peak	59
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.59	113.22	22.89	1180.01	AMPS	740.93	AMPS peak	65
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.59	113.24	22.91	1180.32	AMPS	740.93	AMPS peak	8
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	1.62	114.56	23.75	1197.10	AMPS	740.93	AMPS peak	14
35209	SAN RAMN	60	16	35221	E DUBLIN	60 16	1	1.34	2.40	145.90	57.45	1779.19	AMPS	740.93	AMPS peak	13
(27)																
35212	IUKA	60	16	35213	VALLECTS	60 16	1	0.56	1.74	-44.68	1.60	566.51	AMPS	326.20	AMPS peak	53
35212	IUKA	60	16	35213	VALLECTS	60 16	1	0.56	1.75	-44.75	1.62	569.29	AMPS	326.20	AMPS peak	2
35212	IUKA	60	16	35213	VALLECTS	60 16	1	0.56	1.89	47.69	-0.70	617.36	AMPS	326.20	AMPS peak	13
(28)																
35213	VALLECTS	60	16	35214	SUNOL	60 16	1	0.60	1.78	-48.23	-5.28	579.97	AMPS	326.20	AMPS peak	53
35213	VALLECTS	60	16	35214	SUNOL	60 16	1	0.60	1.79	48.33	5.31	582.79	AMPS	326.20	AMPS peak	2
35213	VALLECTS	60	16	35214	SUNOL	60 16	1	0.60	1.94	51.72	-8.69	631.50	AMPS	326.20	AMPS peak	13
(29)																
35214	SUNOL	60	16	35216	DCTO JCT	60 16	1	0.73	1.93	53.52	8.34	628.61	AMPS	326.20	AMPS peak	53
35214	SUNOL	60	16	35216	DCTO JCT	60 16	1	0.73	1.94	53.63	-8.40	631.56	AMPS	326.20	AMPS peak	2
35214	SUNOL	60	16	35216	DCTO JCT	60 16	1	0.73	2.09	-57.22	-12.17	680.26	AMPS	326.20	AMPS peak	13

Attachment 3 - Power Flow Results

PEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-----FROM bus--------				-------TO bus--- -----				loading p.u.(rate 3)		--------- outage ---------				(Rate 3)		contingency
bus	--name--	-kv-	zn	bus	--name--	- kv-zn	ID	base	outage	MW	MVAR	FLOW		RATING		number
(30)																
35216	DCTO JCT	60	16	35217	NEWARK	60 16	1	0.73	1.93	-55.45	-11.69	628.50	AMPS	326.20	AMPS peak	53
35216	DCTO JCT	60	16	35217	NEWARK	60 16	1	0.73	1.94	-55.57	-11.78	631.46	AMPS	326.20	AMPS peak	2
35216	DCTO JCT	60	16	35217	NEWARK	60 16	1	0.73	2.08	-59.48	-16.11	680.12	AMPS	326.20	AMPS peak	13
(31)																
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.25	89.88	7.34	928.61	AMPS	740.93	AMPS peak	26
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.25	89.99	7.02	928.39	AMPS	740.93	AMPS peak	43
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.25	90.05	7.01	929.11	AMPS	740.93	AMPS peak	42
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.26	90.09	7.37	931.38	AMPS	740.93	AMPS peak	23
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.26	90.09	7.37	931.38	AMPS	740.93	AMPS peak	24
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.26	90.36	6.72	931.05	AMPS	740.93	AMPS peak	16
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.26	90.36	7.11	933.06	AMPS	740.93	AMPS peak	40
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.26	90.36	7.16	933.54	AMPS	740.93	AMPS peak	28
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.26	90.37	7.27	933.57	AMPS	740.93	AMPS peak	62
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.27	90.72	7.38	938.38	AMPS	740.93	AMPS peak	20
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.27	90.78	7.32	937.88	AMPS	740.93	AMPS peak	58
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.27	90.82	7.15	937.99	AMPS	740.93	AMPS peak	60
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.27	90.82	7.16	937.95	AMPS	740.93	AMPS peak	61
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.27	91.24	7.50	944.68	AMPS	740.93	AMPS peak	69
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.28	91.32	7.47	947.22	AMPS	740.93	AMPS peak	77
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.29	92.03	8.09	959.31	AMPS	740.93	AMPS peak	73
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.30	92.57	7.82	964.14	AMPS	740.93	AMPS peak	72
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.30	92.88	6.78	959.92	AMPS	740.93	AMPS peak	4
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.32	93.02	8.57	974.86	AMPS	740.93	AMPS peak	54
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.32	94.78	6.32	980.14	AMPS	740.93	AMPS peak	5
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.33	94.61	7.76	984.33	AMPS	740.93	AMPS peak	56
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.33	95.00	6.78	981.80	AMPS	740.93	AMPS peak	6
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.38	97.77	8.36	1024.99	AMPS	740.93	AMPS peak	57
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.44	102.66	6.37	1067.98	AMPS	740.93	AMPS peak	55
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.49	103.96	10.88	1107.08	AMPS	740.93	AMPS peak	59
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.49	104.07	10.58	1106.21	AMPS	740.93	AMPS peak	65
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.49	104.09	10.60	1106.50	AMPS	740.93	AMPS peak	8
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	1.52	105.34	11.13	1123.06	AMPS	740.93	AMPS peak	14
35221	E DUBLIN	60	16	35223	PARKS TP	60 16	1	1.25	2.28	133.84	31.36	1692.70	AMPS	740.93	AMPS peak	13
(32)																
35612	TRIMBLE	115	18	35613	GISH JCT	115 18	1	0.15	1.27	-184.42	60.55	1010.02	AMPS	798.25	AMPS peak	54
(33)																
35613	GISH JCT	115	18	35616	SJ B E	115 18	1	0.13	1.28	-188.41	54.82	1023.63	AMPS	798.25	AMPS peak	54
(34)																
35618	SN JSE A	115	18	35619	SJ B F	115 18	1	0.42	1.10	219.51	-33.43	1159.38	AMPS	1054.29	AMPS peak	54
(35)																
35620	EL PATIO	115	18	35621	IBM-HR J	115 18	1	0.62	1.01	183.84	2.94	957.36	AMPS	948.86	AMPS peak	54
(36)																
35620	EL PATIO	115	18	35651	BAILY J3	115 18	1	0.63	1.01	-184.42	3.08	960.36	AMPS	948.86	AMPS peak	54
(37)																
35621	IBM-HR J	115	18	35642	MTCALF 1	115 18	1	0.62	1.01	-188.24	-17.65	957.19	AMPS	948.86	AMPS peak	54

Attachment 3 - Power Flow Results

PEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-----FROM bus--------				--------TO bus--- -----				loading p.u.(rate 3)		--------- outage ---------			(Rate 3)	contingency
bus	--name--	-kv-	zn	bus	--name--	- kv-zn	ID	base	outage	MW	MVAR	FLOW	RATING	number
(38)														
35642	MTCALF 1	115	18	35651	BAILY J3	115 18	1	0.63	1.01	190.26	24.34	960.04 AMPS	948.86 AMPS	peak 54
(39)														
35654	MORGN J1	115	18	35901	GRN VLY1	115 19	1	0.23	1.55	125.41	-5.90	630.36 AMPS	406.66 AMPS	peak 77
(40)														
35911	LGNTSSW1	115	19	35914	NTVD SW1	115 19	1	0.31	1.73	140.46	19.42	701.86 AMPS	406.66 AMPS	peak 80
(41)														
35911	LGNTSSW1	115	19	35915	PRNDL J1	115 19	1	0.34	1.38	153.01	-18.55	762.92 AMPS	552.25 AMPS	peak 80
(42)														
35914	NTVD SW1	115	19	35920	SALINAS1	115 19	1	0.13	1.45	115.83	12.19	588.20 AMPS	406.66 AMPS	peak 80
(43)														
35915	PRNDL J1	115	19	35922	MOSSLND1	115 19	1	0.45	1.38	-154.77	-23.43	762.72 AMPS	552.25 AMPS	peak 80
(44)														
35917	PRNDL J2	115	19	35921	MOSSLND2	115 19	1	0.52	1.02	-114.08	-10.09	563.98 AMPS	552.25 AMPS	peak 81
(45)														
35918	SALINAS2	115	19	35928	DOLAN J2	115 19	1	0.48	1.14	-123.81	-16.52	630.13 AMPS	552.25 AMPS	peak 81
(46)														
35921	MOSSLND2	115	19	35922	MOSSLND1	115 19	1	0.14	1.06	-263.46	-29.33	1268.33 AMPS	1199.89 AMPS	peak 43
35921	MOSSLND2	115	19	35922	MOSSLND1	115 19	1	0.14	1.14	283.22	37.59	1372.64 AMPS	1199.89 AMPS	peak 42

ATTACHMENTS 3E:

YEAR 2002 SOUTH BAY STRESS CASE
BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
SOUTHBAY STRESS OFFPEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

-------FROM bus-----				-------TO bus--------				loading p.u.(rate 3)		------outage -------			(Rate 3)	contingency
bus	--name---	kv-	zn	bus	--name---	kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	number
(1)															
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.01	78.09	19.84	80.57 MVA	80.00 MVA	southby_mec 54
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.01	78.21	19.78	80.68 MVA	80.00 MVA	southby_mec 56
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.01	78.55	20.14	81.09 MVA	80.00 MVA	southby_mec 57
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.07	83.48	20.36	85.92 MVA	80.00 MVA	southby_mec 55
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.09	83.79	23.09	86.91 MVA	80.00 MVA	southby_mec 59
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.09	83.92	23.09	87.04 MVA	80.00 MVA	southby_mec 65
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.09	83.95	23.12	87.08 MVA	80.00 MVA	southby_mec 8
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.10	85.05	23.91	88.35 MVA	80.00 MVA	southby_mec 14
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.94	1.42	104.49	45.56	113.99 MVA	80.00 MVA	southby_mec 13
(2)															
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.62	1.05	101.71	49.44	113.08 MVA	107.50 MVA	southby_mec 2
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.62	1.05	101.82	49.40	113.17 MVA	107.50 MVA	southby_mec 53
(3)															
30705	MONTAVIS	230	17	35356	MNTA VSA	115	17	1	0.69	1.05	132.07	74.45	151.61 MVA	144.00 MVA	southby_mec 16
(4)															
30735	METCALF	230	18	30738	MTCALF2M	230	18	1	0.62	1.45	579.30	173.24	1470.89 AMPS	1011.62 AMPS	southby_mec 72
(5)															
30738	MTCALF2M	230	18	35643	MTCALF 2	115	18	1	0.55	1.26	-576.86	-99.15	585.32 MVA	463.70 MVA	southby_mec 72
(6)															
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.62	1.12	-92.24	-22.52	976.40 AMPS	875.65 AMPS	southby_mec 2
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.62	1.12	-92.35	-22.47	976.71 AMPS	875.65 AMPS	southby_mec 53
(7)															
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	0.65	1.44	101.88	21.73	1070.54 AMPS	740.93 AMPS	southby_mec 53
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	0.65	1.45	101.84	21.76	1070.89 AMPS	740.93 AMPS	southby_mec 2
(8)															
35205	RADUM	60	16	35206	KAISER	60	16	1	0.49	1.28	-89.17	-6.24	949.53 AMPS	740.93 AMPS	southby_mec 2
35205	RADUM	60	16	35206	KAISER	60	16	1	0.49	1.28	-89.22	-6.22	949.29 AMPS	740.93 AMPS	southby_mec 53
(9)															
35205	RADUM	60	16	35219	VINEYARD	60	16	1	0.84	1.03	99.57	3.51	996.62 AMPS	971.87 AMPS	southby_mec 14
(10)															
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.82	1.31	92.38	15.60	973.10 AMPS	740.93 AMPS	southby_mec 13
(11)															
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.58	1.38	-96.06	-12.11	1021.92 AMPS	740.93 AMPS	southby_mec 2
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.58	1.38	-96.10	-12.09	1021.61 AMPS	740.93 AMPS	southby_mec 53
(12)															
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.00	76.67	9.91	741.49 AMPS	740.93 AMPS	southby_mec 6
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.02	77.82	10.55	757.36 AMPS	740.93 AMPS	southby_mec 54

35209 SAN RAMN 60 16 35221 E DUBLIN 60 16 1 0.95 1.02 77.95 10.51 756.70 AMPS 740.93 AMPS southby_mec 56

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
SOUTHBAY STRESS OFFPEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

-------FROM bus-----				-------TO bus-------					loading p.u.(rate 3)		------outage -------			(Rate 3)		contingency
bus	--name---	kv-	zn	bus	--name---	kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING		number
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.03	78.28	10.78	760.16 AMPS	740.93	AMPS	southby_mec 57
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.09	83.17	9.92	804.88 AMPS	740.93	AMPS	southby_mec 55
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.10	83.48	12.39	815.28 AMPS	740.93	AMPS	southby_mec 59
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.10	83.61	12.36	816.45 AMPS	740.93	AMPS	southby_mec 65
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.10	83.64	12.38	816.83 AMPS	740.93	AMPS	southby_mec 8
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.12	84.73	12.89	828.27 AMPS	740.93	AMPS	southby_mec 14
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.95	1.45	103.95	27.33	1073.58 AMPS	740.93	AMPS	southby_mec 13
(13)																
35212	IUKA	60	16	35213	VALLECTS	60	16	1	0.39	1.02	31.38	0.32	332.75 AMPS	326.20	AMPS	southby_mec 13
35212	IUKA	60	16	35213	VALLECTS	60	16	1	0.39	1.04	-32.06	2.14	340.78 AMPS	326.20	AMPS	southby_mec 53
35212	IUKA	60	16	35213	VALLECTS	60	16	1	0.39	1.05	-32.11	2.16	341.51 AMPS	326.20	AMPS	southby_mec 2
(14)																
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.42	1.05	-33.28	-2.54	343.93 AMPS	326.20	AMPS	southby_mec 13
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.42	1.08	-34.01	-0.81	351.57 AMPS	326.20	AMPS	southby_mec 53
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.42	1.08	-34.06	-0.80	352.31 AMPS	326.20	AMPS	southby_mec 2
(15)																
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.51	1.14	-36.51	-3.97	373.03 AMPS	326.20	AMPS	southby_mec 13
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.51	1.17	-37.25	-2.28	380.58 AMPS	326.20	AMPS	southby_mec 53
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.51	1.17	-37.30	-2.27	381.33 AMPS	326.20	AMPS	southby_mec 2
(16)																
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.51	1.14	-37.19	-5.10	372.95 AMPS	326.20	AMPS	southby_mec 13
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.51	1.17	-37.96	-3.46	380.53 AMPS	326.20	AMPS	southby_mec 53
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.51	1.17	-38.01	-3.46	381.28 AMPS	326.20	AMPS	southby_mec 2
(17)																
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.85	1.01	75.52	5.90	746.78 AMPS	740.93	AMPS	southby_mec 59
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.85	1.01	75.65	5.86	747.96 AMPS	740.93	AMPS	southby_mec 65
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.85	1.01	75.68	5.87	748.34 AMPS	740.93	AMPS	southby_mec 8
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.85	1.03	76.74	6.23	759.69 AMPS	740.93	AMPS	southby_mec 14
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.85	1.35	95.19	17.05	1001.22 AMPS	740.93	AMPS	southby_mec 13
(18)																
35612	TRIMBLE	115	18	35613	GISH JCT	115	18	1	0.16	1.05	-159.23	64.21	836.13 AMPS	798.25	AMPS	southby_mec 54
(19)																
35613	GISH JCT	115	18	35616	SJ B E	115	18	1	0.17	1.06	162.94	60.06	848.43 AMPS	798.25	AMPS	southby_mec 54
(20)																
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.08	0.00	46.25	46.25 MVA	43.00	MVA	southby_mec 33
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.08	0.00	46.25	46.25 MVA	43.00	MVA	southby_mec 75
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.08	0.00	46.32	46.32 MVA	43.00	MVA	southby_mec 16
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.08	0.00	46.49	46.49 MVA	43.00	MVA	southby_mec 34
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.08	0.00	46.50	46.50 MVA	43.00	MVA	southby_mec 19
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.08	-0.00	46.41	46.41 MVA	43.00	MVA	southby_mec 17
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.08	-0.00	46.43	46.43 MVA	43.00	MVA	southby_mec 26
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.08	-0.00	46.63	46.63 MVA	43.00	MVA	southby_mec 21
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.09	0.00	47.03	47.03 MVA	43.00	MVA	southby_mec 38
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.09	0.00	47.06	47.06 MVA	43.00	MVA	southby_mec 27
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.09	0.00	47.06	47.06 MVA	43.00	MVA	southby_mec 29

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS DUE TO LEVEL C CONTINGENCIES:
SOUTHBAY STRESS OFFPEAK CASE WITH 600 MW GENERATION AT METCALF ENERGY CENTER

-------FROM bus-----				-------TO bus--------					loading p.u.(rate 3)		------outage -------			(Rate 3)	contingency
bus	--name---	kv-	zn	bus	--name---	kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	number
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.09	0.00	47.06	47.06 MVA	43.00 MVA	southby_mec 30
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.09	0.00	47.06	47.06 MVA	43.00 MVA	southby_mec 39
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.09	-0.00	46.66	46.66 MVA	43.00 MVA	southby_mec 65
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.09	0.00	46.76	46.76 MVA	43.00 MVA	southby_mec 8
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.10	0.00	47.22	47.22 MVA	43.00 MVA	southby_mec 36
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.10	-0.00	47.21	47.21 MVA	43.00 MVA	southby_mec 25
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.10	-0.00	47.21	47.21 MVA	43.00 MVA	southby_mec 71
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.11	0.00	47.62	47.62 MVA	43.00 MVA	southby_mec 22
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.11	-0.00	47.52	47.52 MVA	43.00 MVA	southby_mec 41
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.11	0.00	47.52	47.52 MVA	43.00 MVA	southby_mec 74
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.11	-0.00	47.53	47.53 MVA	43.00 MVA	southby_mec 47
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.11	-0.00	47.75	47.75 MVA	43.00 MVA	southby_mec 20
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.12	0.00	48.09	48.09 MVA	43.00 MVA	southby_mec 18
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.12	0.00	48.10	48.10 MVA	43.00 MVA	southby_mec 35
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.12	0.00	48.25	48.25 MVA	43.00 MVA	southby_mec 70
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.12	-0.00	48.26	48.26 MVA	43.00 MVA	southby_mec 15
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.13	0.00	48.72	48.72 MVA	43.00 MVA	southby_mec 69
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.13	-0.00	48.75	48.75 MVA	43.00 MVA	southby_mec 50
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.14	0.00	49.01	49.01 MVA	43.00 MVA	southby_mec 82
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.15	-0.00	49.51	49.51 MVA	43.00 MVA	southby_mec 68
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.17	-0.00	50.12	50.12 MVA	43.00 MVA	southby_mec 78
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.22	0.00	52.51	52.51 MVA	43.00 MVA	southby_mec 79
35907	PAUL SWT	115	19	36218	M	115	19	1	1.07	1.23	0.00	52.96	52.96 MVA	43.00 MVA	southby_mec 80
(21)															
35911	LGNTSSW1	115	19	35914	NTVD SW1	115	19	1	0.20	1.07	90.72	13.72	434.52 AMPS	406.66 AMPS	southby_mec 80

ATTACHMENTS 3F:

BRANCH LOADING FLAGS:

SOUTHBAY STRESS OFFPEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-------FROM bus------				--------TO bus---------				loading p.u.(rate 3)		------- outage --------			(Rate 3)	contingency
bus	--name---	kv-	zn	bus	--name---	kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	number
(1)															
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.01	78.10	19.08	80.40 MVA	80.00 MVA	southby 4
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.02	78.89	19.33	81.22 MVA	80.00 MVA	southby 5
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.02	79.19	19.86	81.64 MVA	80.00 MVA	southby 6
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.03	79.54	20.93	82.25 MVA	80.00 MVA	southby 54
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.04	80.38	20.78	83.02 MVA	80.00 MVA	southby 56
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.05	80.94	21.53	83.75 MVA	80.00 MVA	southby 57
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.10	84.81	23.79	88.08 MVA	80.00 MVA	southby 59
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.10	84.94	23.74	88.19 MVA	80.00 MVA	southby 65
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.10	84.97	23.76	88.23 MVA	80.00 MVA	southby 8
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.11	85.92	21.48	88.56 MVA	80.00 MVA	southby 55
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.12	85.99	24.56	89.43 MVA	80.00 MVA	southby 14
30555	SANRAMON	230	16	35209	SAN RAMN	60	16	1	0.96	1.44	105.74	46.14	115.37 MVA	80.00 MVA	southby 13
(2)															
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.62	1.06	102.83	49.90	114.30 MVA	107.50 MVA	southby 2
30585	LS PSTAS	230	16	35220	LPOSTAS	60	16	1	0.62	1.06	102.94	49.84	114.37 MVA	107.50 MVA	southby 53
(3)															
30735	METCALF	230	18	30738	MTCALF2M	230	18	1	0.57	1.32	521.82	153.59	1336.68 AMPS	1011.62 AMPS	southby 72
(4)															
30738	MTCALF2M	230	18	35643	MTCALF 2	115	18	1	0.50	1.14	-519.81	-92.40	527.96 MVA	463.70 MVA	southby 72
(5)															
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.62	1.13	-93.31	-22.23	991.90 AMPS	875.65 AMPS	southby 2
35203	LIVERMRE	60	16	35220	LPOSTAS	60	16	1	0.62	1.13	-93.41	-22.18	991.86 AMPS	875.65 AMPS	southby 53
(6)															
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	0.64	1.46	102.30	21.74	1081.49 AMPS	740.93 AMPS	southby 2
35203	LIVERMRE	60	16	35222	CALMAT60	60	16	1	0.64	1.46	102.34	21.70	1080.77 AMPS	740.93 AMPS	southby 53
(7)															
35205	RADUM	60	16	35206	KAISER	60	16	1	0.48	1.29	-89.63	-6.03	958.97 AMPS	740.93 AMPS	southby 53
35205	RADUM	60	16	35206	KAISER	60	16	1	0.48	1.30	-89.59	-6.05	959.54 AMPS	740.93 AMPS	southby 2
(8)															
35205	RADUM	60	16	35219	VINEYARD	60	16	1	0.85	1.03	99.57	3.51	1000.04 AMPS	971.87 AMPS	southby 14
(9)															
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.84	1.00	74.89	5.33	744.47 AMPS	740.93 AMPS	southby 14
35205	RADUM	60	16	35223	PARKS TP	60	16	1	0.84	1.33	93.56	15.40	987.71 AMPS	740.93 AMPS	southby 13
(10)															
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.58	1.39	-96.48	-11.96	1032.28 AMPS	740.93 AMPS	southby 2
35206	KAISER	60	16	35222	CALMAT60	60	16	1	0.58	1.39	-96.53	-11.93	1031.61 AMPS	740.93 AMPS	southby 53

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS:

SOUTHBAY STRESS OFFPEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-------FROM bus------				-------TO bus---------				loading p.u.(rate 3)		------- outage --------			(Rate 3)	contingency
bus	--name---	kv-	zn	bus	--name---	kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	number
(11)															
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.01	76.62	10.65	745.89 AMPS	740.93 AMPS	southby 72
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.02	77.84	9.85	754.83 AMPS	740.93 AMPS	southby 4
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.03	78.62	9.92	762.27 AMPS	740.93 AMPS	southby 5
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.03	78.91	10.38	765.49 AMPS	740.93 AMPS	southby 6
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.05	79.26	11.21	775.68 AMPS	740.93 AMPS	southby 54
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.05	80.10	10.95	780.26 AMPS	740.93 AMPS	southby 56
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.06	80.65	11.54	787.02 AMPS	740.93 AMPS	southby 57
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.12	84.48	12.78	827.77 AMPS	740.93 AMPS	southby 59
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.12	84.61	12.70	828.67 AMPS	740.93 AMPS	southby 65
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.12	84.64	12.72	829.01 AMPS	740.93 AMPS	southby 8
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.12	85.59	10.39	830.73 AMPS	740.93 AMPS	southby 55
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.13	85.66	13.24	839.84 AMPS	740.93 AMPS	southby 14
35209	SAN RAMN	60	16	35221	E DUBLIN	60	16	1	0.97	1.47	105.18	27.42	1088.47 AMPS	740.93 AMPS	southby 13
(12)															
35212	IUKA	60	16	35213	VALLECTS	60	16	1	0.37	1.04	-31.65	1.95	338.13 AMPS	326.20 AMPS	southby 53
35212	IUKA	60	16	35213	VALLECTS	60	16	1	0.37	1.04	-31.69	1.97	338.98 AMPS	326.20 AMPS	southby 2
(13)															
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.40	1.02	-32.08	-2.77	332.86 AMPS	326.20 AMPS	southby 13
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.40	1.07	-33.58	-0.97	349.02 AMPS	326.20 AMPS	southby 53
35213	VALLECTS	60	16	35214	SUNOL	60	16	1	0.40	1.07	-33.63	-0.96	349.87 AMPS	326.20 AMPS	southby 2
(14)															
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.48	1.11	-35.28	-4.14	362.09 AMPS	326.20 AMPS	southby 13
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.48	1.16	-36.82	2.43	378.21 AMPS	326.20 AMPS	southby 53
35214	SUNOL	60	16	35216	DCTO JCT	60	16	1	0.48	1.16	-36.87	-2.42	379.08 AMPS	326.20 AMPS	southby 2
(15)															
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.48	1.11	-35.92	-5.21	362.01 AMPS	326.20 AMPS	southby 13
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.48	1.16	-37.51	-3.59	378.15 AMPS	326.20 AMPS	southby 53
35216	DCTO JCT	60	16	35217	NEWARK	60	16	1	0.48	1.16	-37.57	-3.59	379.03 AMPS	326.20 AMPS	southby 2
(16)															
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.88	1.02	76.50	6.13	759.03 AMPS	740.93 AMPS	southby 59
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.88	1.03	76.62	6.04	759.97 AMPS	740.93 AMPS	southby 65
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.88	1.03	76.65	6.05	760.30 AMPS	740.93 AMPS	southby 8
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.88	1.03	77.60	3.71	762.76 AMPS	740.93 AMPS	southby 55
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.88	1.04	77.63	6.43	771.03 AMPS	740.93 AMPS	southby 14
35221	E DUBLIN	60	16	35223	PARKS TP	60	16	1	0.88	1.37	96.38	16.88	1015.90 AMPS	740.93 AMPS	southby 13
(17)															
35612	TRIMBLE	115	18	35613	GISH JCT	115	18	1	0.08	1.01	149.30	66.83	806.63 AMPS	798.25 AMPS	southby 54
(18)															
35613	GISH JCT	115	18	35616	SJ B E	115	18	1	0.09	1.03	152.97	62.89	818.68 AMPS	798.25 AMPS	southby 54
(19)															
35907	PAUL SWT	115	19	36218	M	115	19	1	0.92	1.01	0.00	43.52	43.52 MVA	43.00 MVA	southby 15
35907	PAUL SWT	115	19	36218	M	115	19	1	0.92	1.02	-0.00	43.96	43.96 MVA	43.00 MVA	southby 78
35907	PAUL SWT	115	19	36218	M	115	19	1	0.92	1.03	0.00	44.46	44.46 MVA	43.00 MVA	southby 69
35907	PAUL SWT	115	19	36218	M	115	19	1	0.92	1.05	0.00	45.28	45.28 MVA	43.00 MVA	southby 68

Attachment 3 - Power Flow Results

BRANCH LOADING FLAGS:

SOUTHBAY STRESS OFFPEAK CASE WITHOUT 600 MW GENERATION AT METCALF ENERGY CENTER

-------FROM bus------				-------TO bus---------				loading p.u.(rate 3)		------- outage --------			(Rate 3)	contingency
bus	--name---	kv-	zn	bus	--name---	kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	number
35907	PAUL SWT	115	19	36218	M	115	19	1	0.92	1.16	0.00	49.80	49.80 MVA	43.00 MVA	southby 80
35907	PAUL SWT	115	19	36218	M	115	19	1	0.92	1.23	-0.00	52.69	52.69 MVA	43.00 MVA	southby 79
(20)															
35911	LGNTSSW1	115	19	35914	NTVD SW1	115	19	1	0.20	1.10	93.37	13.25	448.83 AMPS	406.66 AMPS	southby 80

Attachment 3 - Power Flow Results

ATTACHMENT 3G
South Bay Stress Case with 600 MW at MEC due to Level B contingencies
BRANCH LOADING FLAGS:

--------FROM bus--------				---------TO bus---------					loading p.u.(rate 3)		--------- outage ---------			(Rate 3)	Contingencies
bus	---name---	-kv-	zn	bus	---name---	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	
(1)															
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.94	1.01	78.29	18.60	80.47 MVA	80.00 MVA	level b 6
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.94	1.03	79.80	21.22	82.57 MVA	80.00 MVA	level b 20
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.94	1.09	84.42	23.29	87.58 MVA	80.00 MVA	level b 140
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.94	1.37	100.99	43.55	109.98 MVA	80.00 MVA	level b 142
(2)															
30585	"LS PSTAS"	230	16	35220	"LPOSTAS "	60	16	"1 "	0.62	1.05	101.71	49.45	113.09 MVA	107.50 MVA	level b 141
(3)															
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	0.87	1.11	16.31	7.92	170.45 AMPS	153.96 AMPS	level b 224
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	0.87	1.19	17.61	8.52	183.38 AMPS	153.96 AMPS	level b 237
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	1.01	1.01	-13.13	6.25	135.33 AMPS	133.75 AMPS	level b 128
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	1.01	1.01	-13.14	6.21	135.31 AMPS	133.75 AMPS	level b 126
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	1.01	1.05	-13.62	6.45	140.36 AMPS	133.75 AMPS	level b 127
(4)															
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.83	1.01	-98.21	0.26	475.95 AMPS	471.92 AMPS	level b 155
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.83	1.03	-99.74	-0.22	483.83 AMPS	471.92 AMPS	level b 144
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.83	1.03	-100.11	0.12	485.64 AMPS	471.92 AMPS	level b 156
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.83	1.40	-133.61	9.86	661.61 AMPS	471.92 AMPS	level b 146
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.94	1.11	-93.92	-2.41	459.99 AMPS	416.19 AMPS	level b 128
(5)															
33315	"RAVENSWD"	115	10	35350	"AMES BS1"	115	17	"1 "	0.64	1.03	-105.57	-30.17	536.15 AMPS	522.13 AMPS	level b 93
33315	"RAVENSWD"	115	10	35350	"AMES BS1"	115	17	"1 "	0.64	1.28	-134.40	-21.75	669.91 AMPS	522.13 AMPS	level b 92
(6)															
33315	"RAVENSWD"	115	10	35351	"AMES BS2"	115	17	"1 "	0.64	1.03	-105.57	-30.17	536.15 AMPS	522.13 AMPS	level b 93
33315	"RAVENSWD"	115	10	35351	"AMES BS2"	115	17	"1 "	0.64	1.28	-134.40	21.75	669.91 AMPS	522.13 AMPS	level b 92
(7)															
35203	"LIVERMRE"	60	16	35220	"LPOSTAS "	60	16	"1 "	0.62	1.12	-92.24	-22.52	976.62 AMPS	875.65 AMPS	level b 141
(8)															
35203	"LIVERMRE"	60	16	35222	"CALMAT60"	60	16	"1 "	0.65	1.45	101.84	21.76	1071.14 AMPS	740.93 AMPS	level b 141
(9)															
35205	"RADUM "	60	16	35206	"KAISER "	60	16	"1 "	0.49	1.28	-89.17	6.24	949.76 AMPS	740.93 AMPS	level b 141
(10)															
35205	"RADUM "	60	16	35223	"PARKS TP"	60	16	"1 "	0.82	1.26	89.06	15.52	935.26 AMPS	740.93 AMPS	level b 142

Attachment 3 - Power Flow Results

South Bay Stress Case with 600 MW at MEC
 # BRANCH LOADING FLAGS:

--------FROM bus--------				---------TO bus---------					loading p.u.(rate 3)		--------- outage ---------			(Rate 3)	Contingencies
bus	---name---	-kv-	zn	bus	---name---	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	
(11)															
35206	"KAISER "	60	16	35222	"CALMAT60"	60	16	"1 "	0.58	1.38	-96.06	12.11	1022.16 AMPS	740.93 AMPS	level b 141
(12)															
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.95	1.01	77.20	9.59	744.90 AMPS	740.93 AMPS	level b 31
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.95	1.02	78.02	9.40	753.57 AMPS	740.93 AMPS	level b 6
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.95	1.04	79.52	11.54	773.99 AMPS	740.93 AMPS	level b 20
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.95	1.11	84.10	12.45	820.90 AMPS	740.93 AMPS	level b 140
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.95	1.40	100.49	26.57	1035.36 AMPS	740.93 AMPS	level b 142
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	1.12	1.13	72.73	10.00	704.03 AMPS	625.46 AMPS	level b 126
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	1.12	1.13	72.99	10.00	706.81 AMPS	625.46 AMPS	level b 128
(13)															
35212	"1UKA "	60	16	35213	"VALLECTS"	60	16	"1 "	0.39	1.05	32.11	2.16	341.59 AMPS	326.20 AMPS	level b 141
(14)															
35213	"VALLECTS"	60	16	35214	"SUNOL "	60	16	"1 "	0.42	1.08	-34.06	0.80	352.39 AMPS	326.20 AMPS	level b 141
(15)															
35214	"SUNOL "	60	16	35216	"DCTO JCT"	60	16	"1 "	0.51	1.17	-37.30	-2.27	381.43 AMPS	326.20 AMPS	level b 141
(16)															
35216	"DCTO JCT"	60	16	35217	"NEWARK "	60	16	"1 "	0.51	1.17	-38.01	-3.46	381.38 AMPS	326.20 AMPS	level b 141
(17)															
35221	"E DUBLIN"	60	16	35223	"PARKS TP"	60	16	"1 "	0.85	1.02	76.13	5.89	752.44 AMPS	740.93 AMPS	level b 140
35221	"E DUBLIN"	60	16	35223	"PARKS TP"	60	16	"1 "	0.85	1.30	91.86	16.91	963.28 AMPS	740.93 AMPS	level b 142
35221	"E DUBLIN"	60	16	35223	"PARKS TP"	60	16	"1 "	1.01	1.02	65.05	4.83	636.28 AMPS	625.46 AMPS	level b 126
35221	"E DUBLIN"	60	16	35223	"PARKS TP"	60	16	"1 "	1.01	1.02	65.31	4.79	639.04 AMPS	625.46 AMPS	level b 128
(18)															
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	0.00	46.15	46.15 MVA	43.00 MVA	level b 204
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	0.00	46.17	46.17 MVA	43.00 MVA	level b 165
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	0.00	46.17	46.17 MVA	43.00 MVA	level b 182
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	0.00	46.17	46.17 MVA	43.00 MVA	level b 200
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	0.00	46.18	46.18 MVA	43.00 MVA	level b 180
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	0.00	46.22	46.22 MVA	43.00 MVA	level b 178
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	-0.00	46.04	46.04 MVA	43.00 MVA	level b 177
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	-0.00	46.06	46.06 MVA	43.00 MVA	level b 208
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	-0.00	46.08	46.08 MVA	43.00 MVA	level b 194
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	-0.00	46.11	46.11 MVA	43.00 MVA	level b 132
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	-0.00	46.11	46.11 MVA	43.00 MVA	level b 179
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	-0.00	46.19	46.19 MVA	43.00 MVA	level b 84
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.07	-0.00	46.19	46.19 MVA	43.00 MVA	level b 102
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.08	0.00	46.32	46.32 MVA	43.00 MVA	level b 98

Attachment 3 - Power Flow Results

South Bay Stress Case with 600 MW at MEC
BRANCH LOADING FLAGS:

--------FROM bus--------				---------TO bus---------					loading p.u.(rate 3)		--------- outage ---------			(Rate 3)	Contingencies
bus	---name---	-kv-	zn	bus	---name---	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.08	0.00	46.37	46.37 MVA	43.00 MVA	level b 207
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.08	-0.00	46.23	46.23 MVA	43.00 MVA	level b 203
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.08	-0.00	46.28	46.28 MVA	43.00 MVA	level b 176
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.08	-0.00	46.31	46.31 MVA	43.00 MVA	level b 170
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.08	-0.00	46.32	46.32 MVA	43.00 MVA	level b 99
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.08	-0.00	46.37	46.37 MVA	43.00 MVA	level b 116
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.08	-0.00	46.38	46.38 MVA	43.00 MVA	level b 181
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.09	-0.00	46.69	46.69 MVA	43.00 MVA	level b 97
35907	"PAUL SWT"	115	19	36218	"M "	115	19	"1 "	1.07	1.10	-0.00	47.23	47.23 MVA	43.00 MVA	level b 237

ATTACHMENT 3H
South Bay Stress Case without 600 MW at MEC
BRANCH LOADING FLAGS:

FROM bus				TO bus					loading p.u.(rate 3)		outage			(Rate 3)	Contingencies
bus	---name---	-kv-	zn	bus	---name---	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	
(1)															
30042	"METCALF "	500	33	30735	"METCALF "	230	18	"1 "	0.65	1.05	1137.63	286.68	1173.19 MVA	1120.00 MVA	level b 243
(2)															
30042	"METCALF "	500	33	30735	"METCALF "	230	18	"2 "	0.68	1.07	1162.11	285.01	1196.55 MVA	1120.00 MVA	level b 242
(3)															
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.01	78.26	19.07	80.55 MVA	80.00 MVA	level b 90
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.01	78.27	19.24	80.60 MVA	80.00 MVA	level b 229
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.01	78.41	20.15	80.96 MVA	80.00 MVA	level b 91
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.01	78.77	19.05	81.04 MVA	80.00 MVA	level b 1
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.03	79.80	19.57	82.16 MVA	80.00 MVA	level b 31
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.04	80.47	19.55	82.81 MVA	80.00 MVA	level b 6
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.06	82.17	22.29	85.14 MVA	80.00 MVA	level b 20
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.11	85.37	23.94	88.66 MVA	80.00 MVA	level b 140
30555	"SANRAMON"	230	16	35209	"SAN RAMN"	60	16	"1 "	0.96	1.40	102.80	44.44	112.00 MVA	80.00 MVA	level b 142
(4)															
30585	"LS PSTAS"	230	16	35220	"LPOSTAS "	60	16	"1 "	0.62	1.06	102.83	49.91	114.31 MVA	107.50 MVA	level b 141
(5)															
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	0.89	1.12	-16.58	7.91	173.05 AMPS	153.96 AMPS	level b 224
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	0.89	1.22	-18.07	8.70	188.36 AMPS	153.96 AMPS	level b 237
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	1.02	1.03	-13.38	6.23	137.61 AMPS	133.75 AMPS	level b 128
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	1.02	1.03	-13.39	6.19	137.58 AMPS	133.75 AMPS	level b 126
32084	"WLLW SLJ"	60	4	32086	"KNGHTSLJ"	60	4	"1 "	1.02	1.07	-13.88	6.41	142.75 AMPS	133.75 AMPS	level b 127
(6)															
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.83	1.01	-98.10	1.67	476.32 AMPS	471.92 AMPS	level b 155
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.83	1.03	-99.63	1.15	484.19 AMPS	471.92 AMPS	level b 144
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.83	1.03	-100.00	1.25	486.00 AMPS	471.92 AMPS	level b 156
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.83	1.41	-133.71	12.02	664.50 AMPS	471.92 AMPS	level b 146
33208	"MARTIN C"	115	9	33310	"SANMATEO"	115	10	"2 "	0.94	1.11	-93.80	-1.00	460.70 AMPS	416.19 AMPS	level b 128
(7)															
33315	"RAVENSWD"	115	10	35350	"AMES BS1"	115	17	"1 "	0.55	1.22	-127.61	-19.80	638.90 AMPS	522.13 AMPS	level b 92
(8)															
33315	"RAVENSWD"	115	10	35351	"AMES BS2"	115	17	"1 "	0.55	1.22	-127.61	-19.80	638.90 AMPS	522.13 AMPS	level b 92
(9)															
34476	"AGRICO "	70	14	34484	"KERMAN "	70	14	"1 "	1.05	1.06	43.37	-10.80	343.71 AMPS	324.97 AMPS	level b 127
(10)															
35203	"LIVERMRE"	60	16	35220	"LPOSTAS "	60	16	"1 "	0.62	1.13	-93.31	-22.23	992.14 AMPS	875.65 AMPS	level b 141

Attachment 3 - Power Flow Results

South Bay Stress Case without 600 MW at MEC
BRANCH LOADING FLAGS:

--------FROM bus--------				---------TO bus---------					loading p.u.(rate 3)		--------- outage ---------			(Rate 3)	Contingencies
bus	---name---	-kv-	zn	bus	---name---	-kv-	zn	ID	base	outage	MW	MVAR	FLOW	RATING	
(11)															
35203	"LIVERMRE"	60	16	35222	"CALMAT60"	60	16	"1 "	0.64	1.46	102.30	21.74	1081.76 AMPS	740.93 AMPS	level b 141
(12)															
35205	"RADUM "	60	16	35206	"KAISER "	60	16	"1 "	0.48	1.30	-89.59	6.05	959.79 AMPS	740.93 AMPS	level b 141
(13)															
35205	"RADUM "	60	16	35219	"VINEYARD"	60	16	"1 "	1.00	1.00	83.82	2.72	830.82 AMPS	827.54 AMPS	level b 128
(14)															
35205	"RADUM "	60	16	35223	"PARKS TP"	60	16	"1 "	0.84	1.29	90.77	15.36	955.93 AMPS	740.93 AMPS	level b 142
35205	"RADUM "	60	16	35223	"PARKS TP"	60	16	"1 "	1.00	1.01	64.09	3.99	629.55 AMPS	625.46 AMPS	level b 126
35205	"RADUM "	60	16	35223	"PARKS TP"	60	16	"1 "	1.00	1.01	64.36	3.96	632.50 AMPS	625.46 AMPS	level b 128
(15)															
35206	"KAISER "	60	16	35222	"CALMAT60"	60	16	"1 "	0.58	1.39	96.48	11.96	1032.54 AMPS	740.93 AMPS	level b 141
(16)															
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.00	76.31	10.28	741.31 AMPS	740.93 AMPS	level b 243
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.01	77.27	10.40	751.54 AMPS	740.93 AMPS	level b 92
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.02	77.99	9.84	754.86 AMPS	740.93 AMPS	level b 90
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.02	78.00	9.96	757.21 AMPS	740.93 AMPS	level b 229
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.03	78.14	10.77	761.33 AMPS	740.93 AMPS	level b 91
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.03	78.50	9.70	760.09 AMPS	740.93 AMPS	level b 1
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.04	79.52	10.00	769.52 AMPS	740.93 AMPS	level b 31
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.05	80.18	9.79	776.94 AMPS	740.93 AMPS	level b 6
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.08	81.87	11.99	799.65 AMPS	740.93 AMPS	level b 20
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.12	85.04	12.81	832.51 AMPS	740.93 AMPS	level b 140
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	0.97	1.43	102.28	26.78	1056.38 AMPS	740.93 AMPS	level b 142
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	1.15	1.16	74.53	10.35	723.77 AMPS	625.46 AMPS	level b 126
35209	"SAN RAMN"	60	16	35221	"E DUBLIN"	60	16	"1 "	1.15	1.16	74.81	10.36	726.76 AMPS	625.46 AMPS	level b 128
(17)															
35212	"IUKA "	60	16	35213	"VALLECTS"	60	16	"1 "	0.37	1.04	-31.69	1.97	339.06 AMPS	326.20 AMPS	level b 141
(18)															
35213	"VALLECTS"	60	16	35214	"SUNOL "	60	16	"1 "	0.40	1.07	-33.63	-0.97	349.96 AMPS	326.20 AMPS	level b 141
(19)															
35214	"SUNOL "	60	16	35216	"DCTO JCT"	60	16	"1 "	0.48	1.16	-36.87	-2.42	379.18 AMPS	326.20 AMPS	level b 141
(20)															
35216	"DCTO JCT"	60	16	35217	"NEWARK "	60	16	"1 "	0.48	1.16	37.57	3.60	379.13 AMPS	326.20 AMPS	level b 141
(21)															
35221	"E DUBLIN"	60	16	35223	"PARKS TP"	60	16	"1 "	0.88	1.03	77.04	6.10	763.83 AMPS	740.93 AMPS	level b 140
35221	"E DUBLIN"	60	16	35223	"PARKS TP"	60	16	"1 "	0.88	1.33	93.58	16.78	984.04 AMPS	740.93 AMPS	level b 142
35221	"E DUBLIN"	60	16	35223	"PARKS TP"	60	16	"1 "	1.04	1.05	66.81	4.96	655.78 AMPS	625.46 AMPS	level b 126
35221	"E DUBLIN"	60	16	35223	"PARKS TP"	60	16	"1 "	1.04	1.05	67.08	4.93	658.73 AMPS	625.46 AMPS	level b 128

Attachment 4:
Revised Power Flow Plots
for (Attachment 4) Metcalf Energy Center
Detailed Facilities Study (DFS)

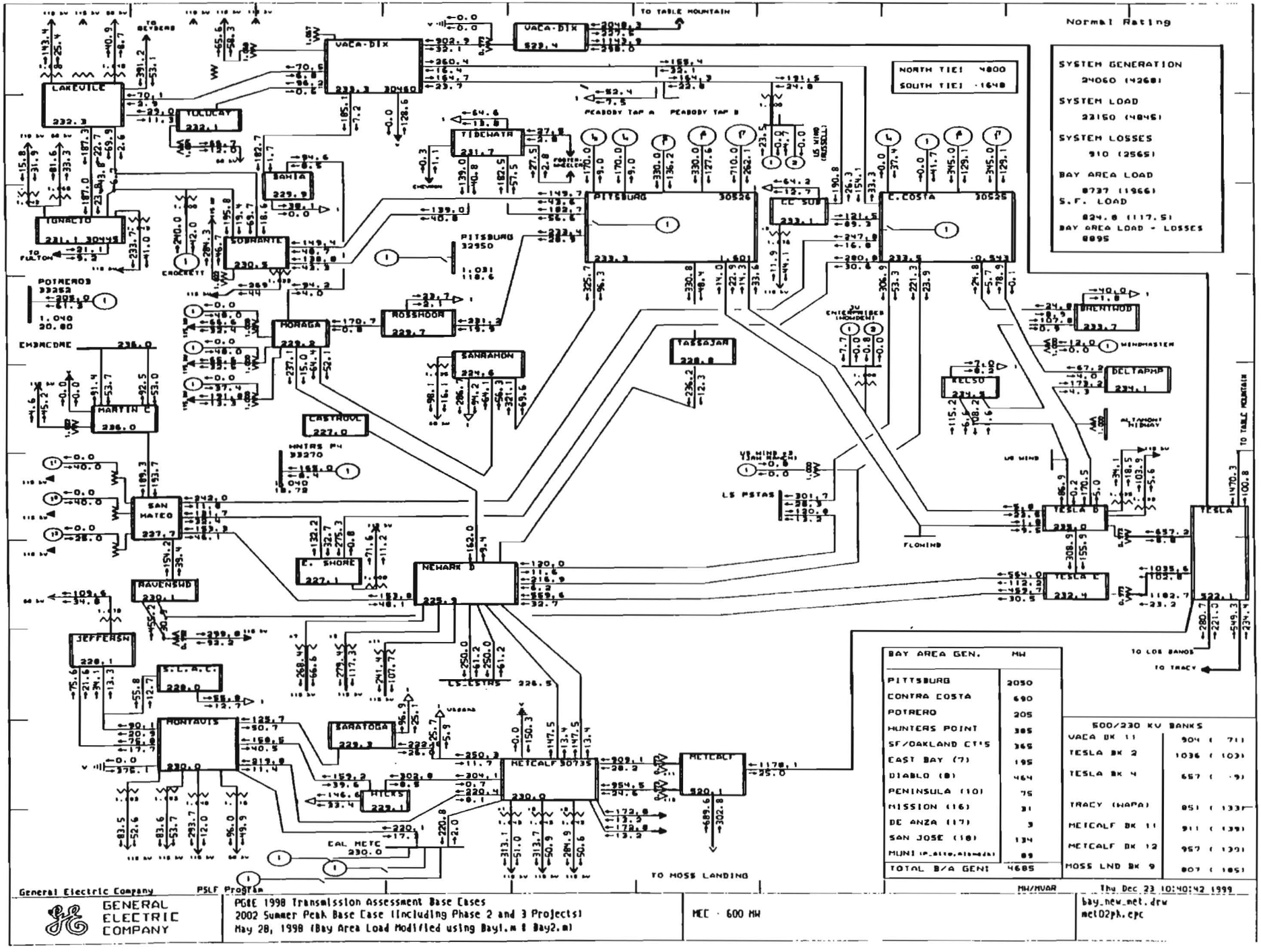
Attachment 4 - Revised Power Flow Plots from Attachment 4 of the Metcalf Energy Center Detailed Facilities Study (DFS).

a. MEC (600 MW) Off-Line: Summer 2002 Peak

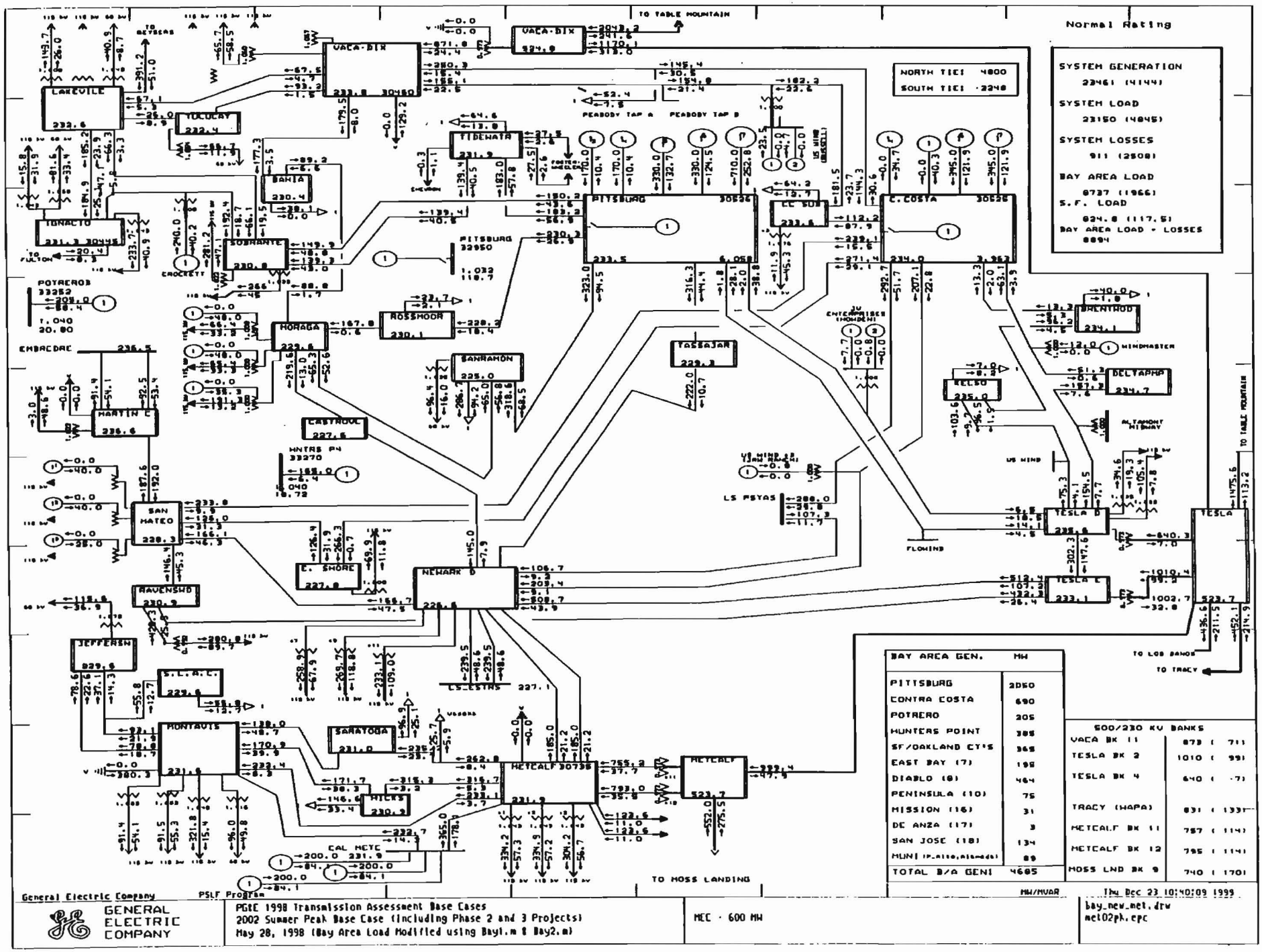
b. MEC (600 MW) On-Line: Summer 2002 Peak

c. MEC (600 MW) Off-Line: Summer 2002 Off-Peak

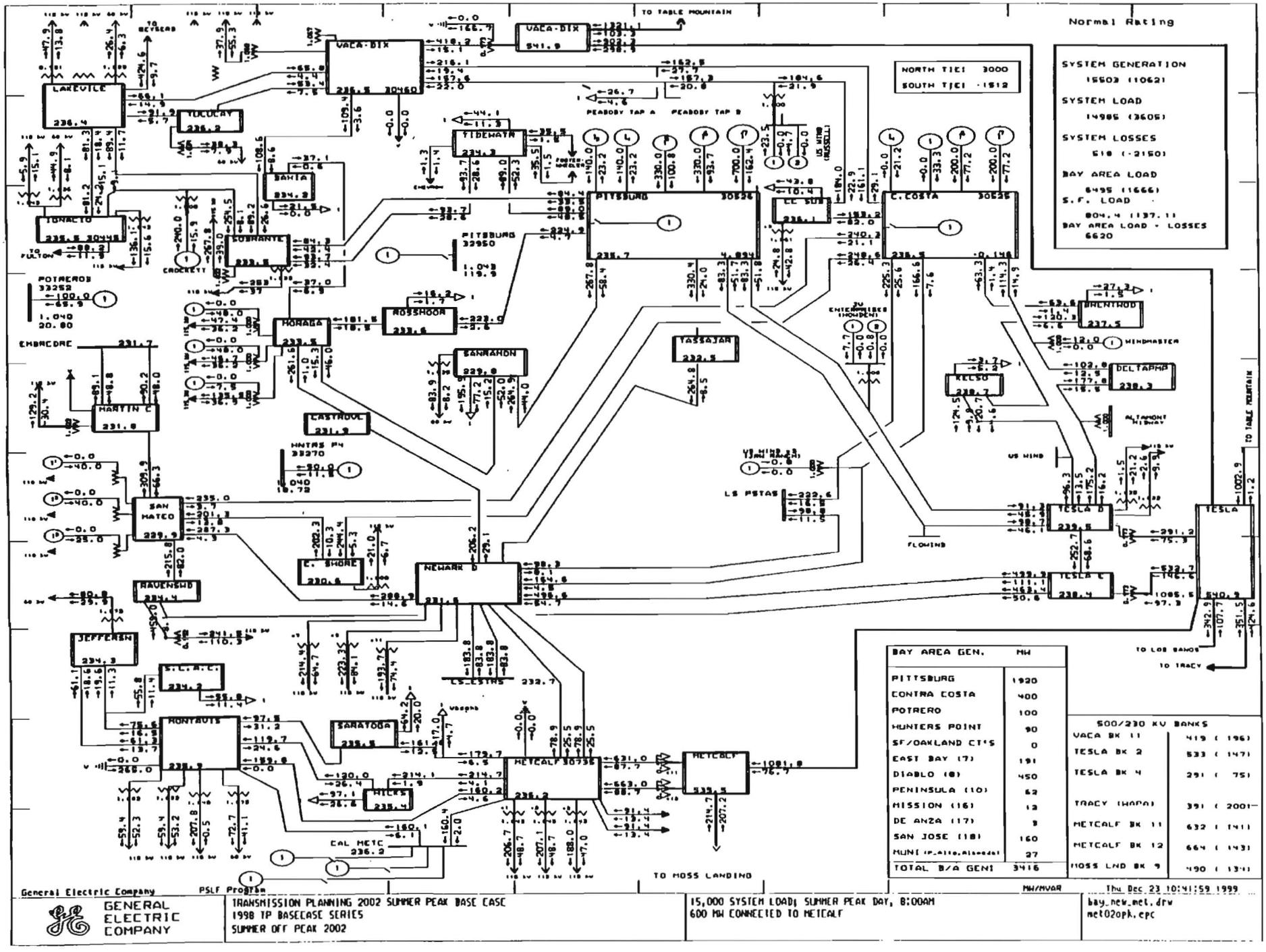
d. MEC (600 MW) On-Line: Summer 2002 Off-Peak



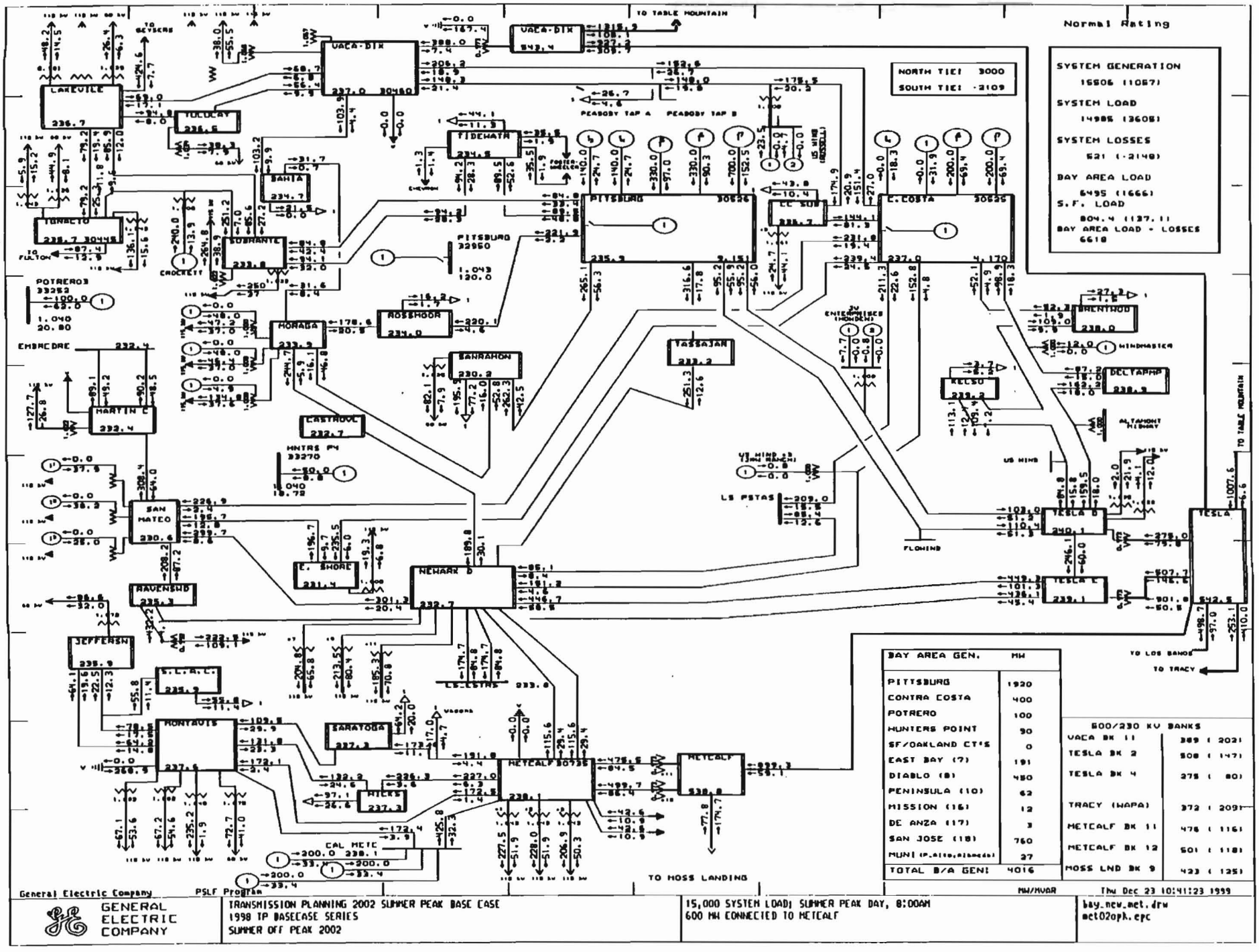
Attachment 4a: MEC (600 MW) Off-Line: Summer 2002 Peak



Attachment 4h: MEC (600 MW) On-Line: Summer 2002 Peak



Attachment 4c: MEC (600 MW) O . Line: Summer 2002 Off-Peak



Attachment 4d: MEC (600 MW) On-Line: Summer 2002 Off-Peak

Attachment 5:
Additional Transient Stability Plots
for
Attachment 5 of DFS

Attachment 5 - Additional Transient Stability Plots for Attachment 5 of DFS.

For each stability case from the DFS, an additional stability plot required to the show the line flows (in MW) for the lines/transformers that are being switched out and any lines/transformers that are in parallel with them.

a. Load Rejection (i.e. loss of 600 MW of MEC's generation) - Loss of the Metcalf-MEC 230 kV circuit and MEC-Monta Vista 230 kV circuit.

b. Loss of Metcalf-Monta Vista #3-230 kV circuit

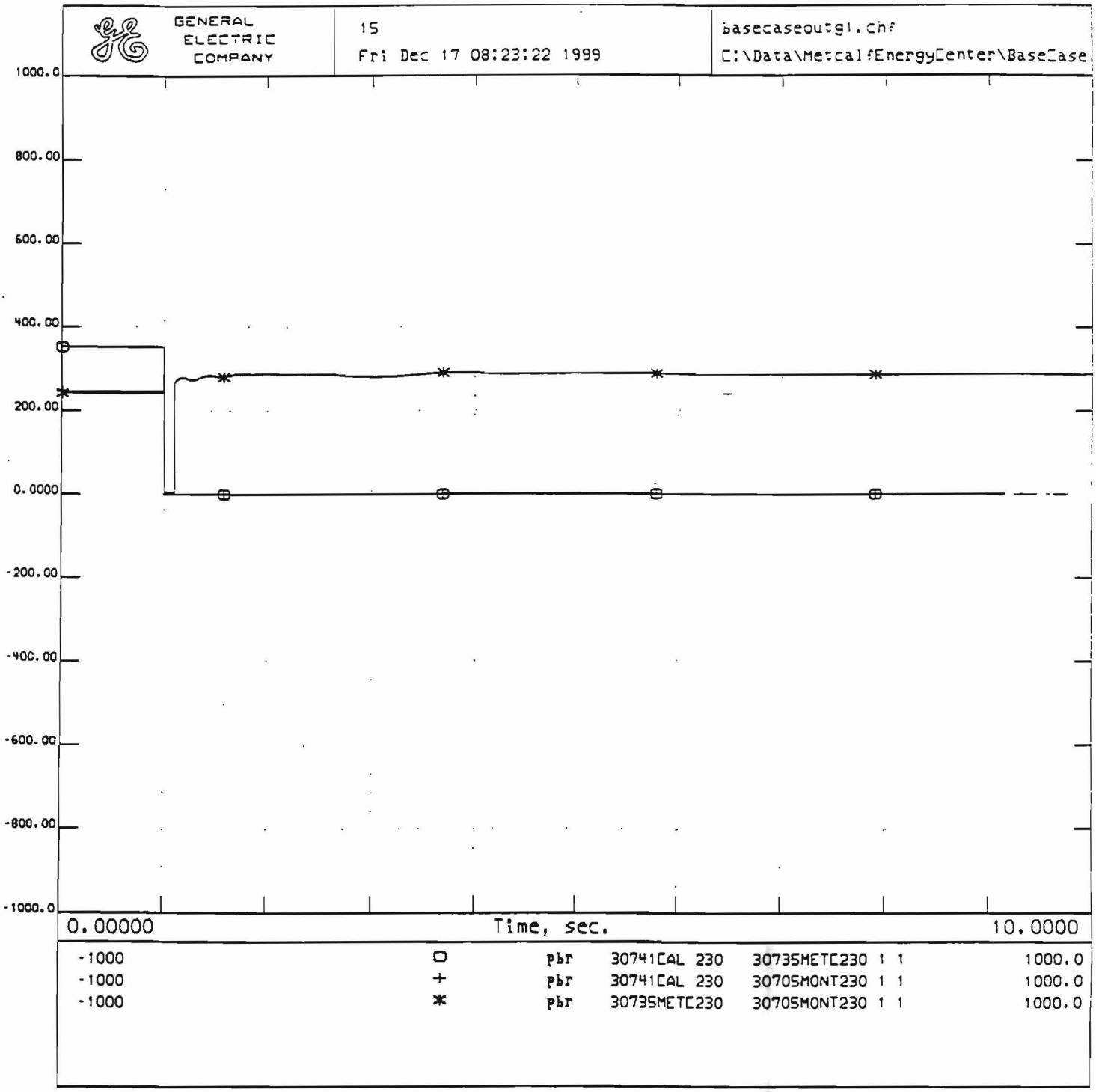
c. Loss of Metcalf Energy Center-Monta Vista 230 kV circuit

d. Loss of Metcalf Energy Center-Metcalf 230 kV circuit

e. Loss of Newark-San Mateo 230 kV circuit

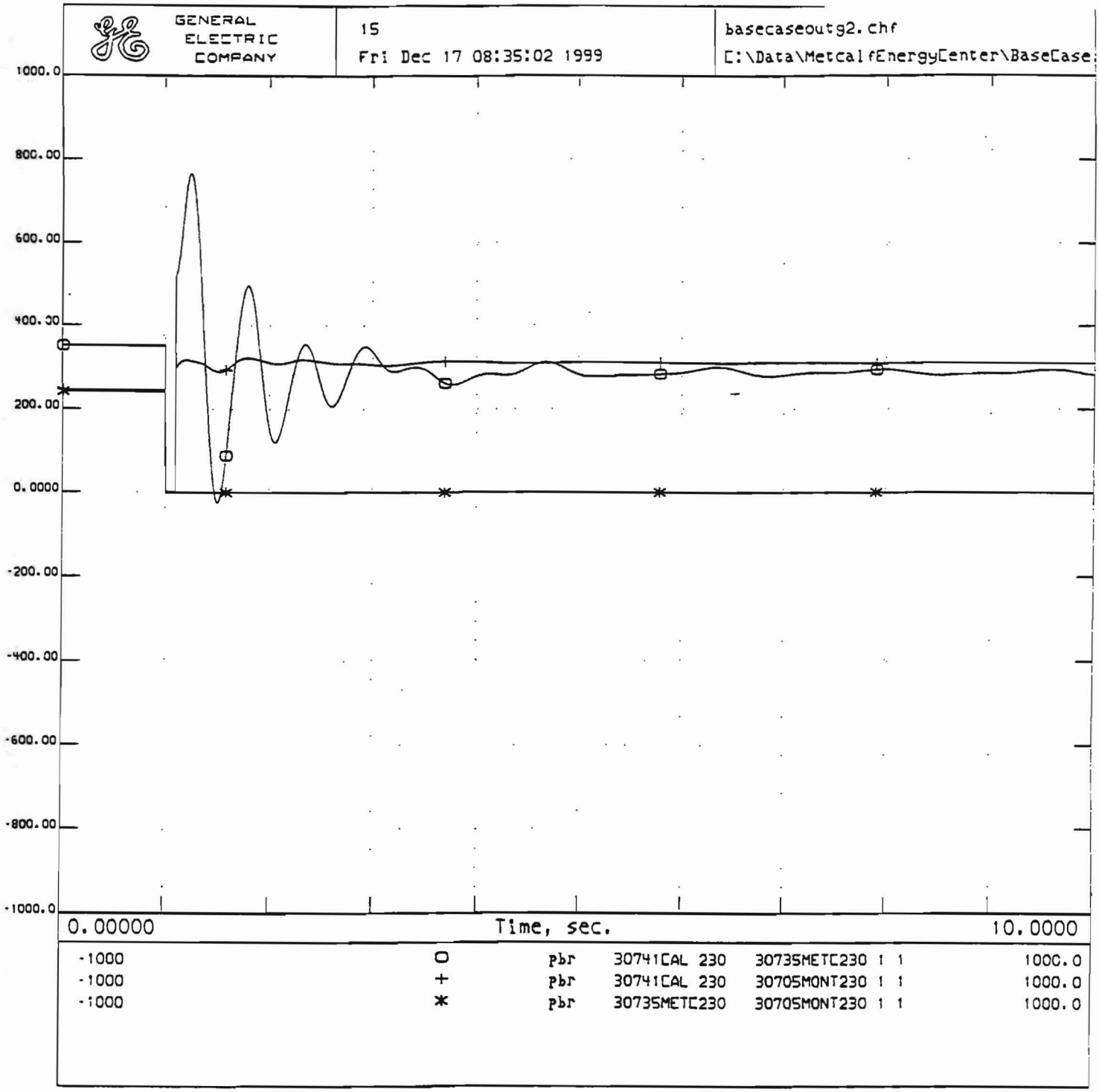
f. Loss of Tesla-Newark 230 kV circuit

g. Loss of Metcalf 500/230 kV Transformer Bank No.11



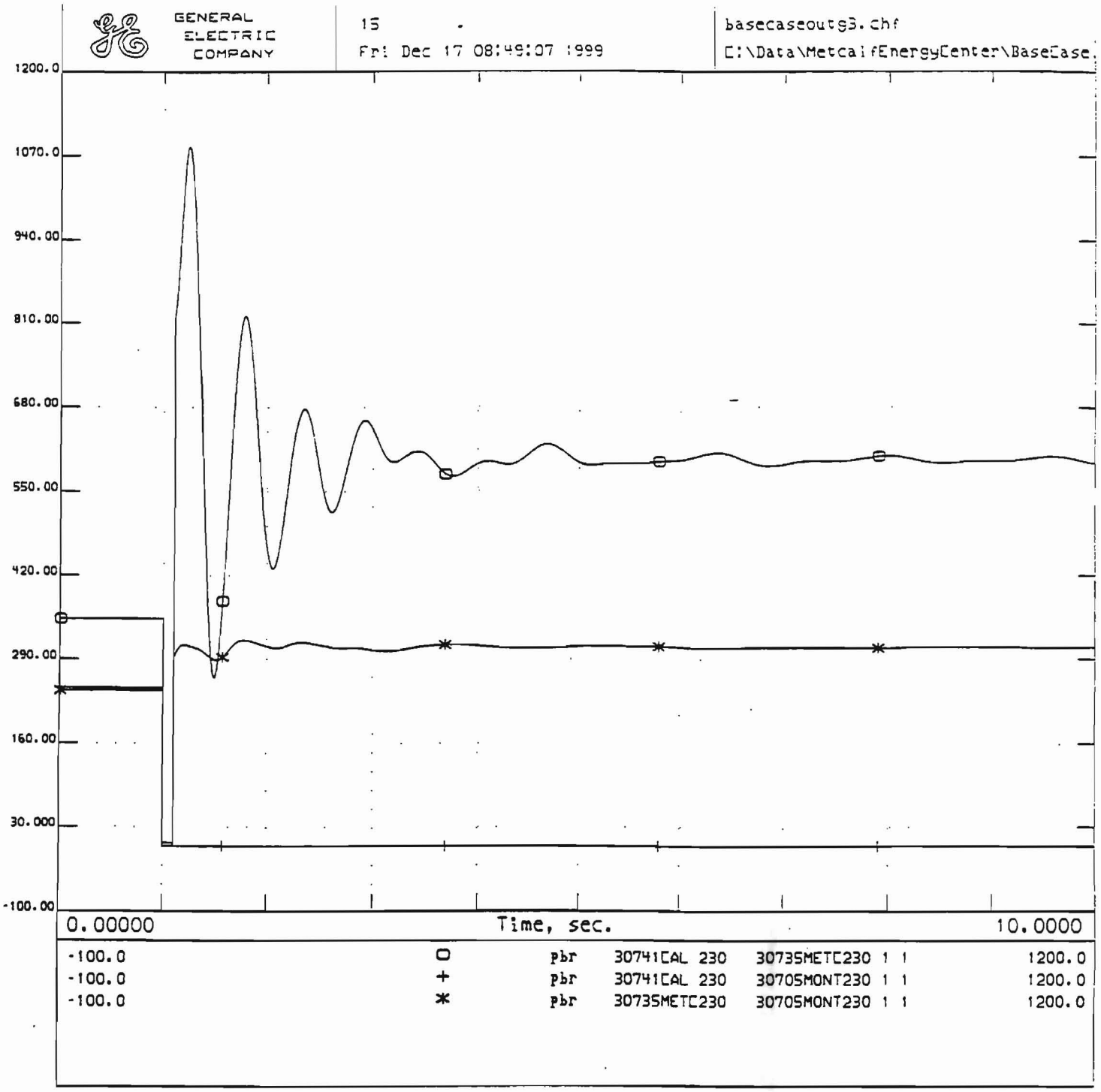
PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT CAL MET 230KV BUS (6 CYC)+TRIP METCALF-MEC-MONTA VISTA 230KV LINE
LOSE 600MW METCALF ENERGY CENTER

Attachment 5a: Load Rejection - Loss of 600 MW of MEC's Generation



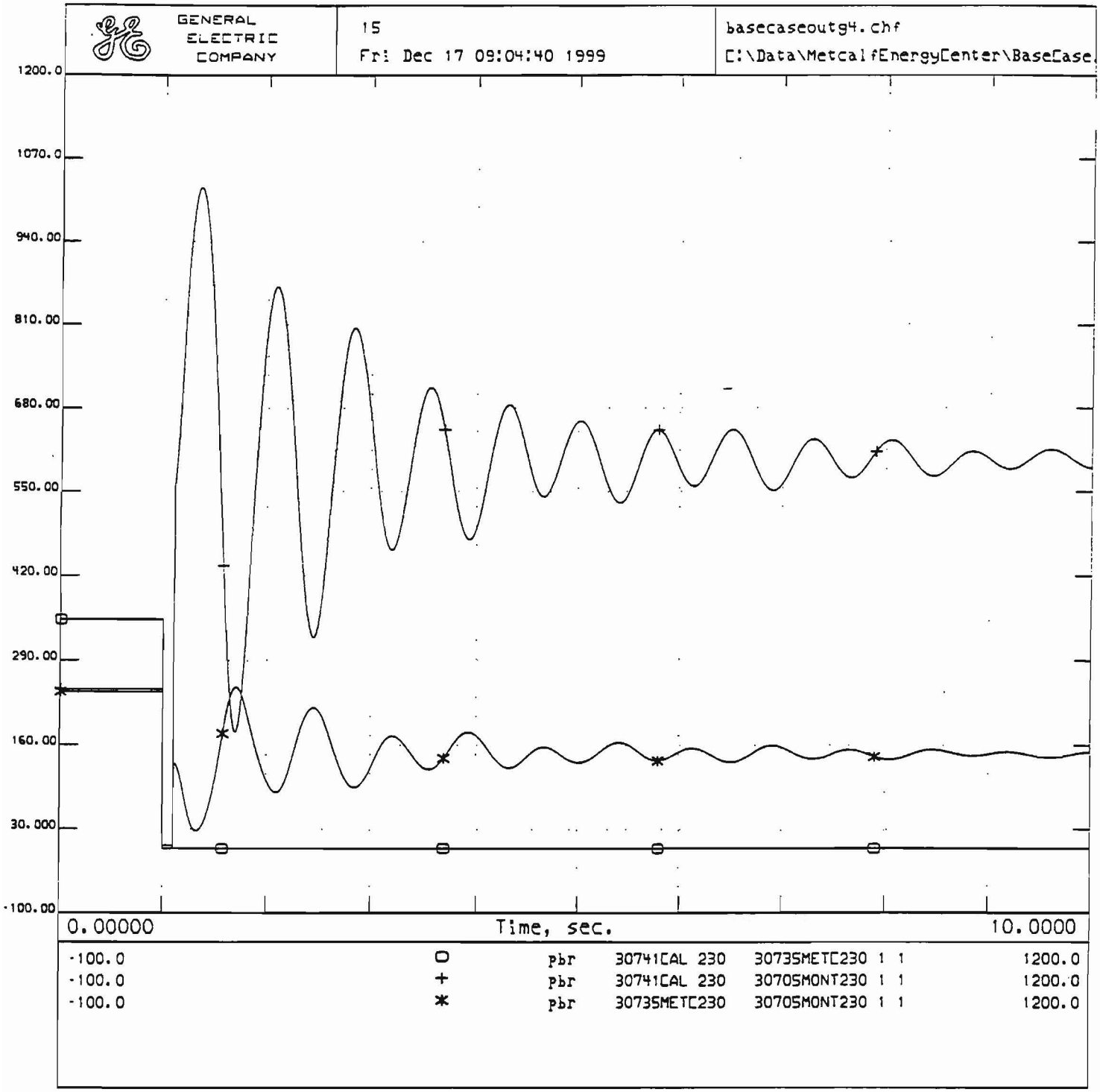
PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT METCALF 230KV BUS (6 CYC)+TRIP METCALF-MONTA VISTA #3 230KV LINE

Attachment 5b: Loss of Metcalf-Monta Vista #3-230 kV Circuit



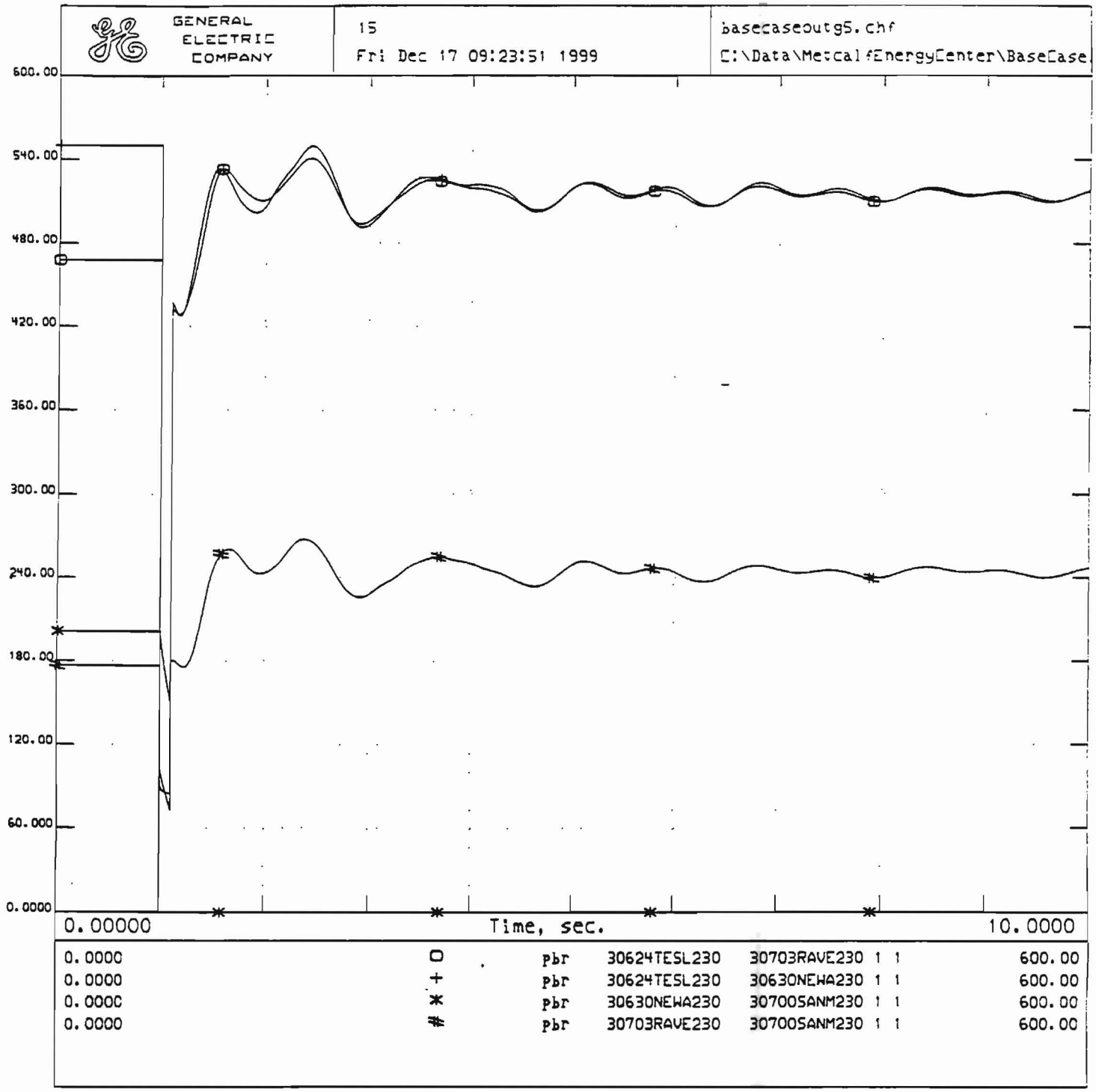
PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT CAL MET 230KV BUS (6 CYC)+TRIP MEC-MONTA VISTA 230KV LINE

Attachment 5c: Loss of Metcalf Energy Center-Monta Vista 230 kV Circuit



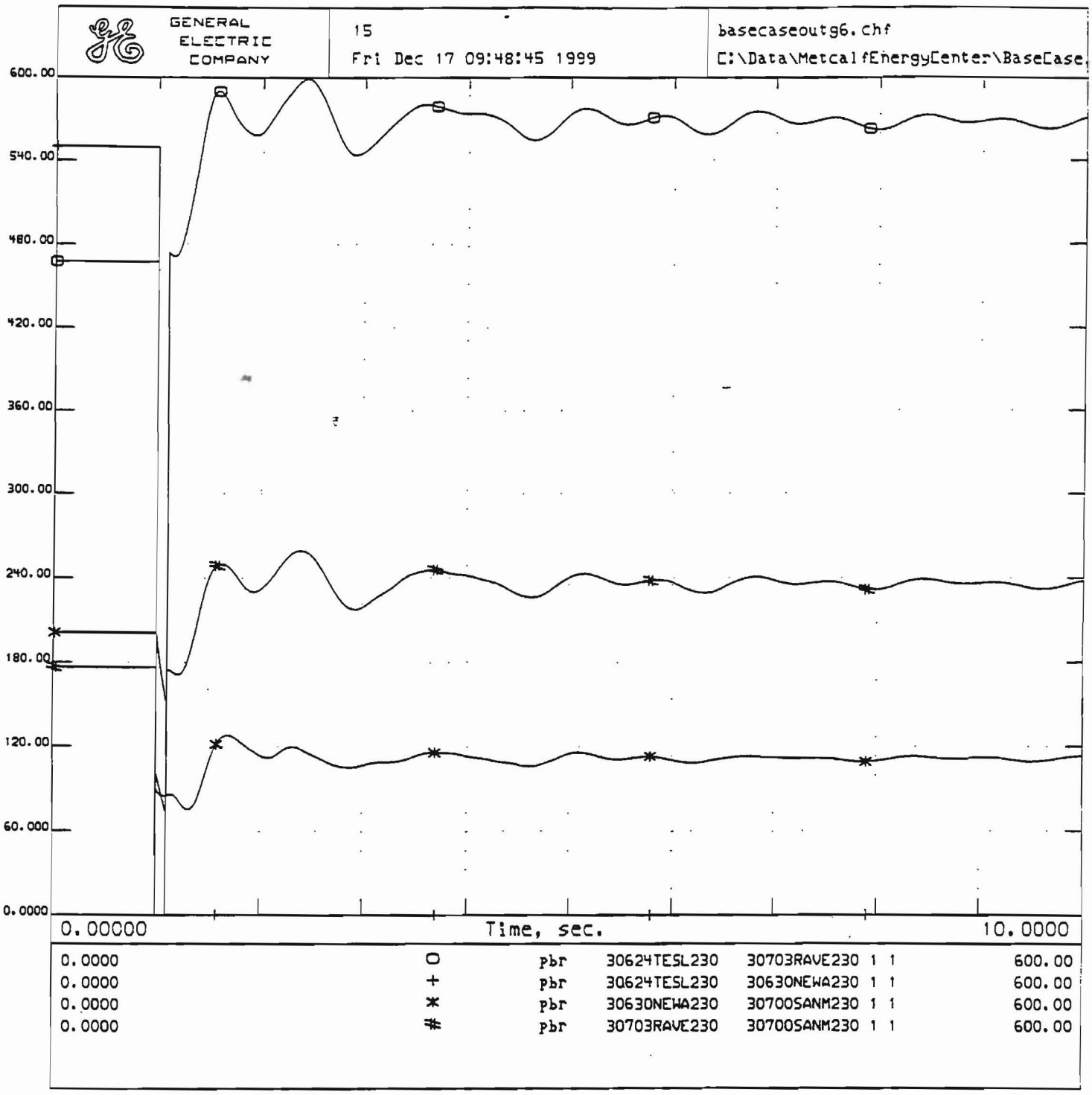
PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT CAL MET 230KV BUS (6 CYC)+TRIP METCALF-MEC 230KV LINE

Attachment 5d: Loss of Metcalf Energy Center-Metcalf 230 kV Circuit



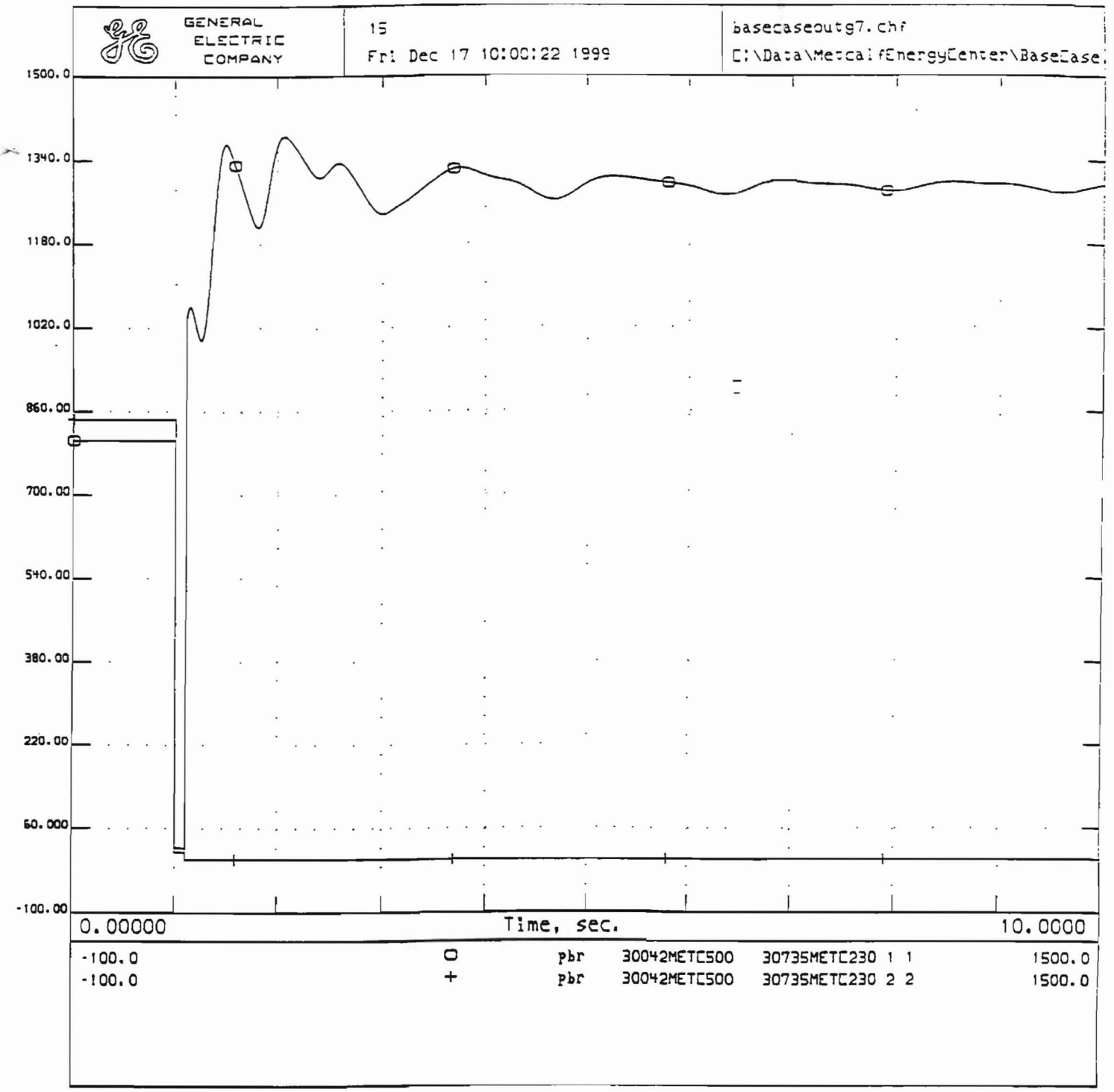
PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE

Attachment 5e: Loss of Newark-San Mateo 230 kV Circuit



PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-TESLA 230KV LINE

Attachment 5f: Loss of Tesla-Newark 230 kV Circuit



PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT METCALF 230KV BUS (6 CYC)+TRIP METCALF 500/230KV BANK

Attachment 5g: Loss of Metcalf 500/230 kV Transformer Bank No.11

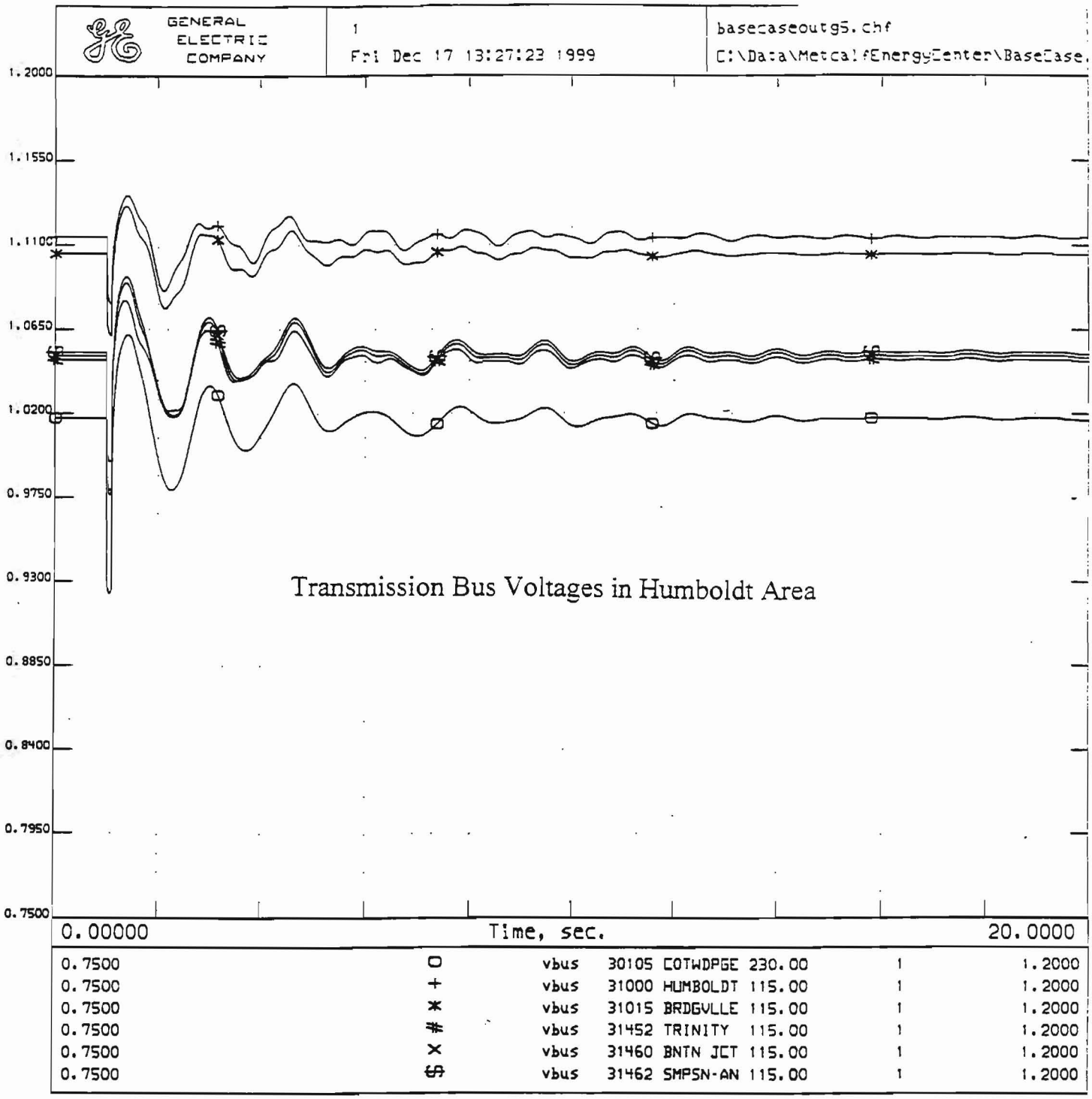
Attachment 6:
Stability Plots
for
Outage #5 of DFS

Attachment 6 - Stability Plots for Outage #5 of DFS

a. Loss of the Newark - San Mateo 230 kV Circuit with MEC (600 MW) in-service.

b. Loss of the Newark - San Mateo 230 kV Circuit without MEC (600 MW) in-service.

Attachment 6a:
Stability Plots
for
Loss of Newark-San Mateo 230 kV Circuit with 600 MW at Metcalf Energy Center



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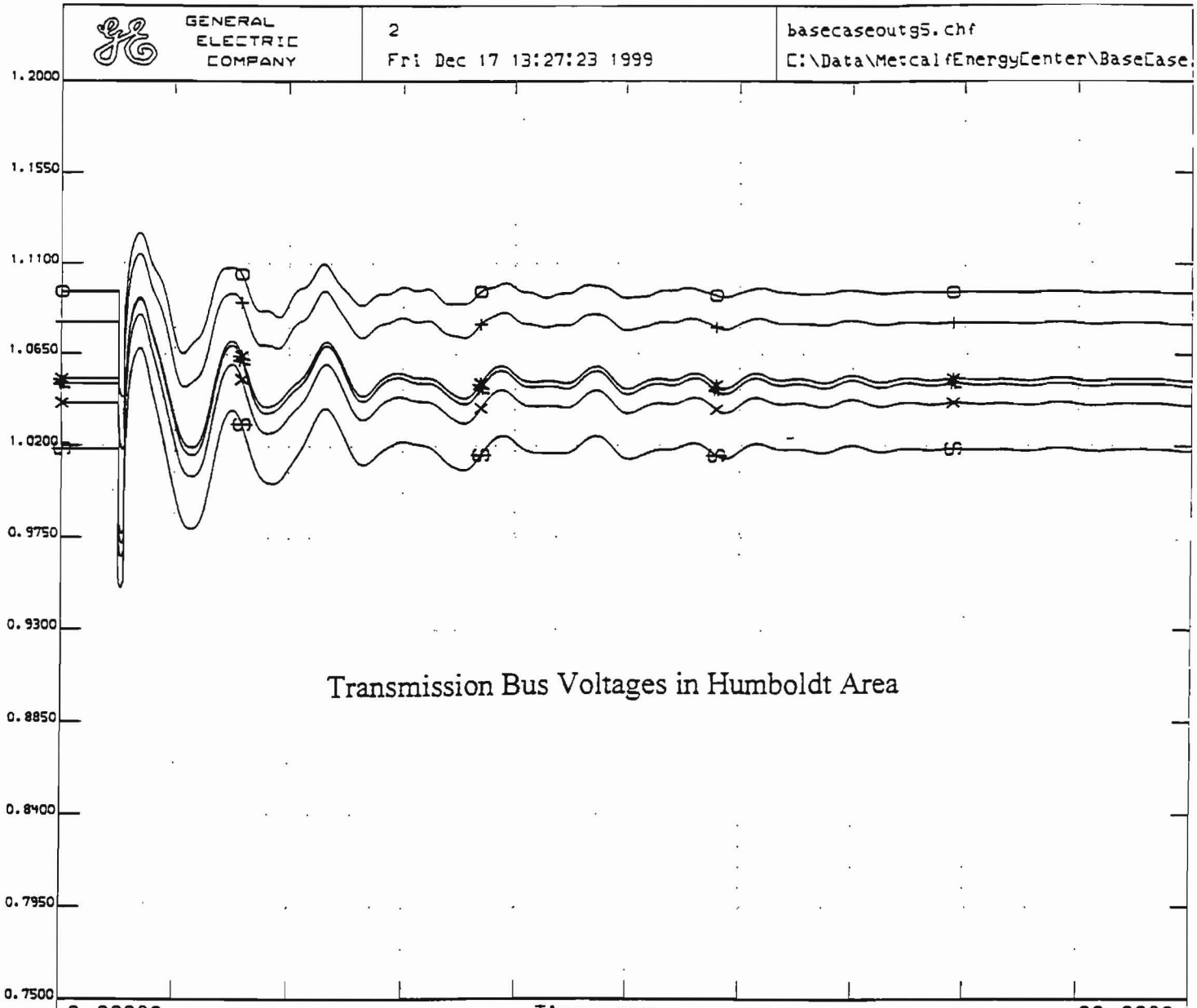
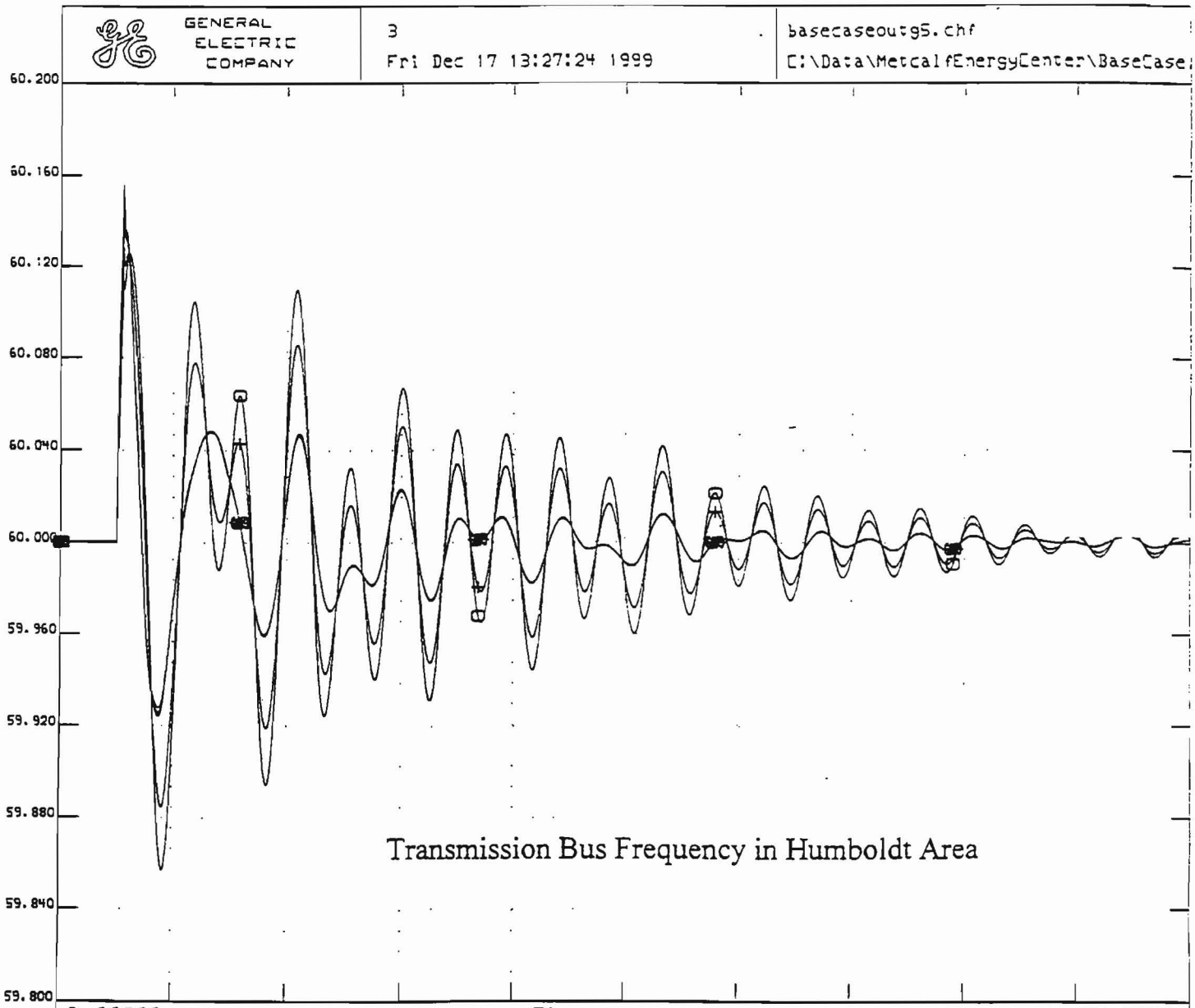
0.7500	+	vbus	31000 HUMBOLDT 115.00	1	1.2000
0.7500	*	vbus	31015 BRDGVLLE 115.00	1	1.2000
0.7500	#	vbus	31452 TRINITY 115.00	1	1.2000
0.7500	×	vbus	31460 BNTN JCT 115.00	1	1.2000
0.7500	$	vbus	31462 SMPSN-AN 115.00	1	1.2000

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE



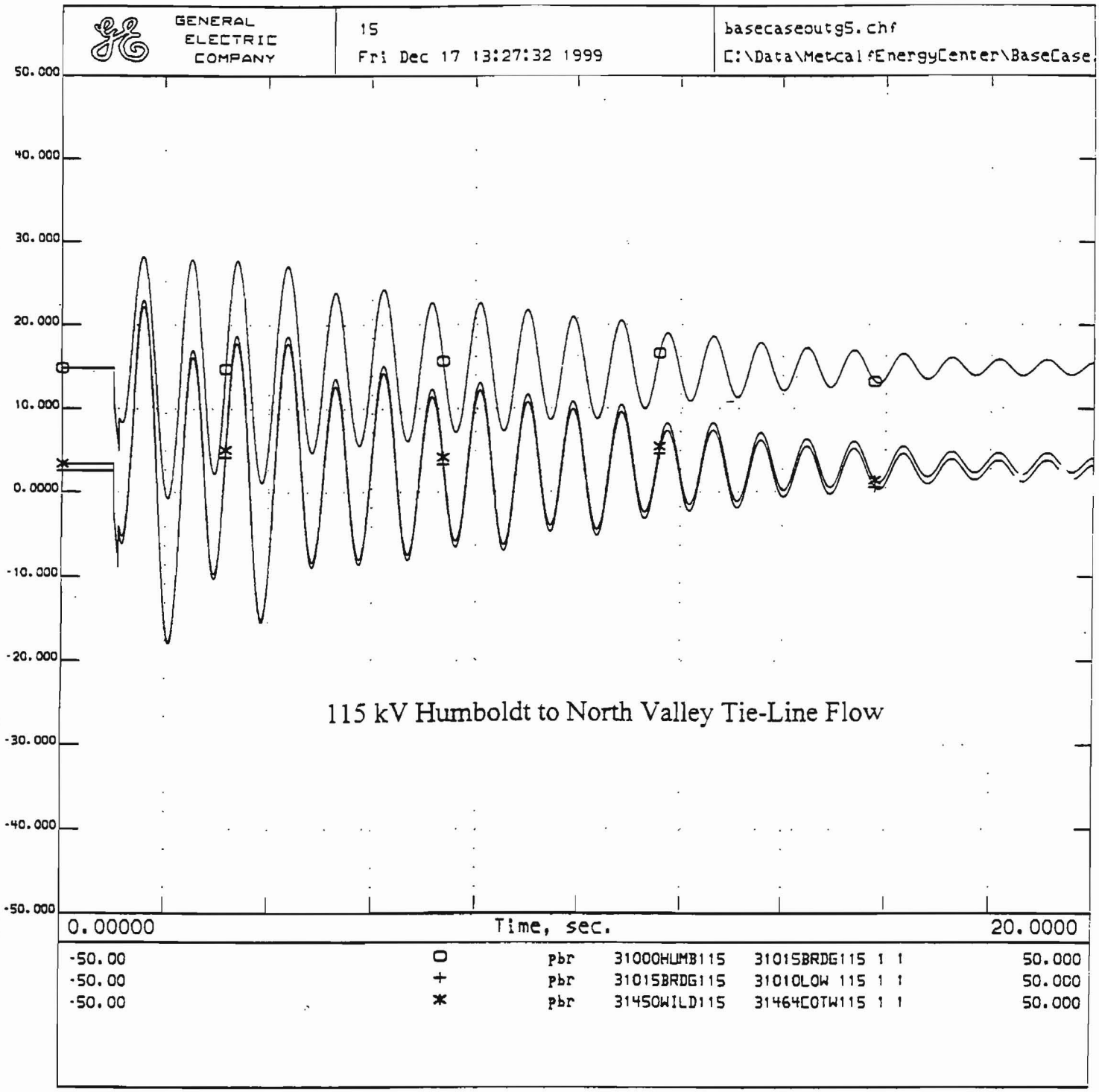
0.7500	o	vbul	31010	LOW GAP1	115.00	1	1.2000
0.7500	+	vbul	31450	WILDWOOD	115.00	1	1.2000
0.7500	*	vbul	31454	PANORAMP	115.00	1	1.2000
0.7500	#	vbul	31464	COTWDPGE	115.00	1	1.2000
0.7500	x	vbul	31466	JESSUP	115.00	1	1.2000
0.7500	$	vbul	31468	CASCADE	115.00	1	1.2000

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE

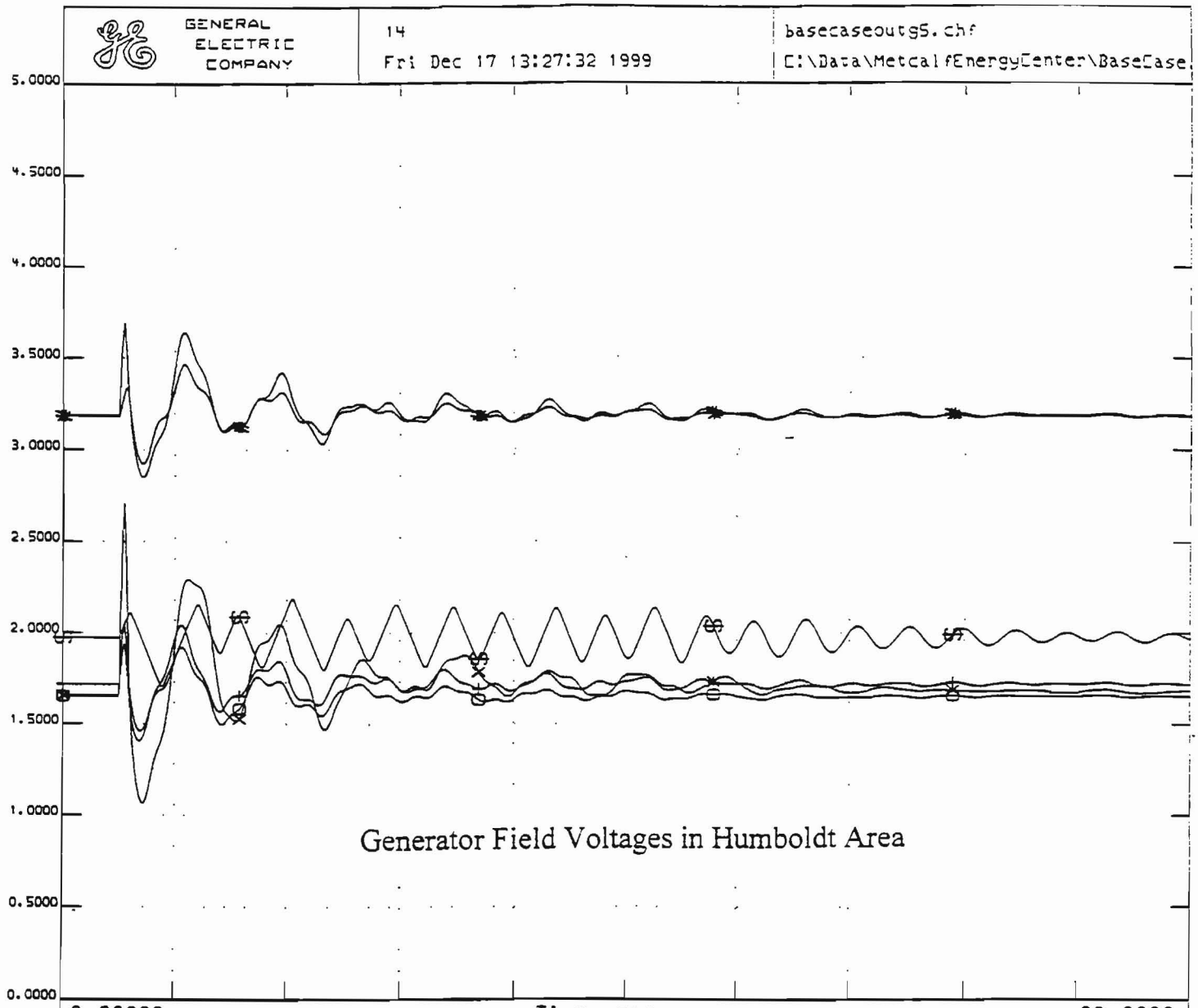


59.800	o	fbul	31010 LOW GAP1	115.00	1	60.200
59.800	+	fbul	31450 WILDWOOD	115.00	1	60.200
59.800	*	fbul	31454 PANORAMP	115.00	1	60.200
59.800	#	fbul	31464 COTWDPGE	115.00	1	60.200
59.800	x	fbul	31466 JESSUP	115.00	1	60.200
59.800	$	fbul	31468 CASCADE	115.00	1	60.200

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE

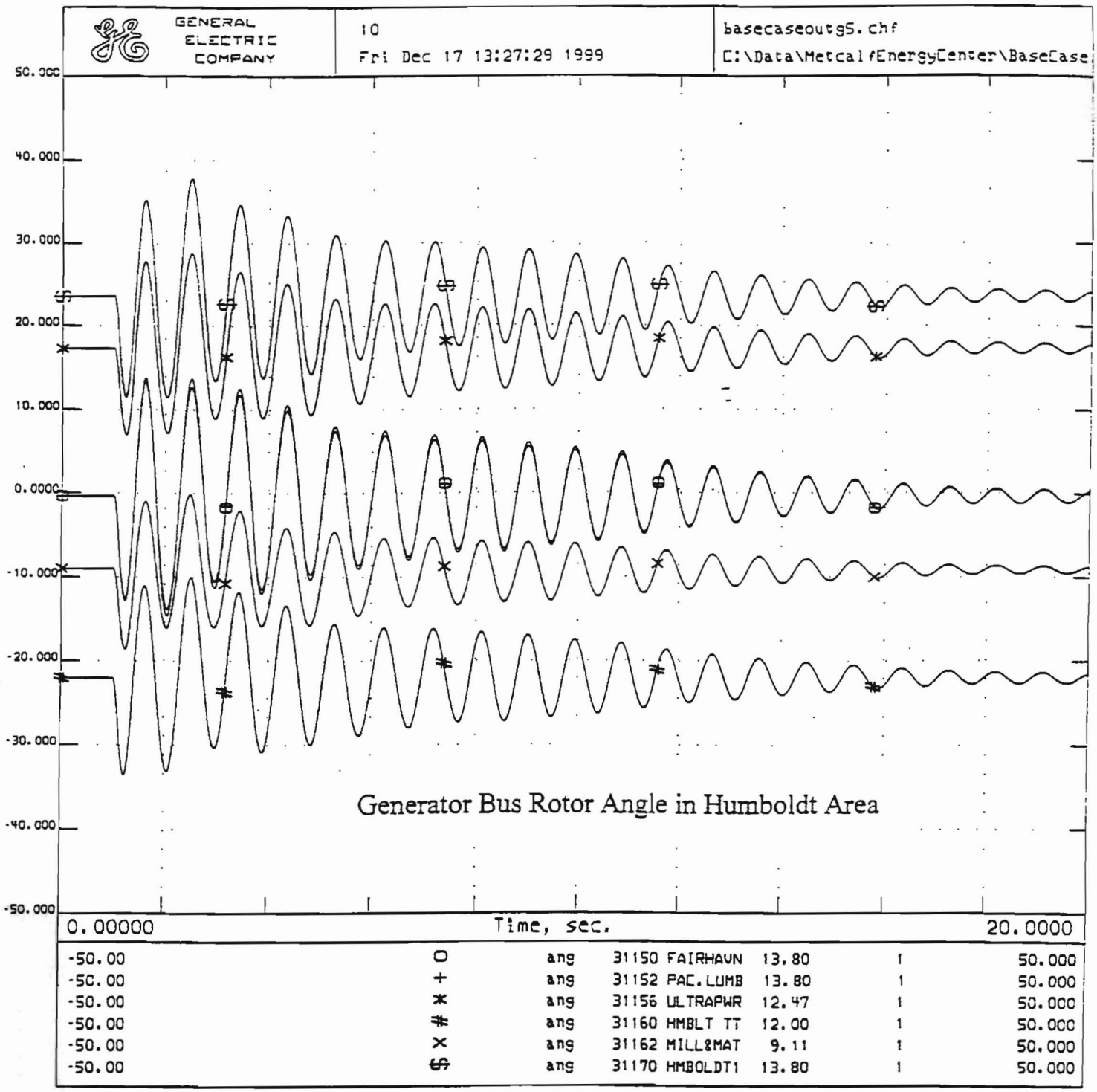


PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE



0.0000	○	efd	31150 FAIRHAVN	13.80	1	5.0000
0.0000	+	efd	31152 PAC.LUMB	13.80	1	5.0000
0.0000	*	efd	31156 ULTRAPWR	12.47	1	5.0000
0.0000	#	efd	31160 HMBLT TT	12.00	1	5.0000
0.0000	×	efd	31162 MILL&MAT	9.11	1	5.0000
0.0000	⊗	efd	31170 HMBOLDT1	13.80	1	5.0000

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE



PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE

GENERAL ELECTRIC COMPANY

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Fri Dec 17 13:27:30 1999

basecaseoutg5.chf

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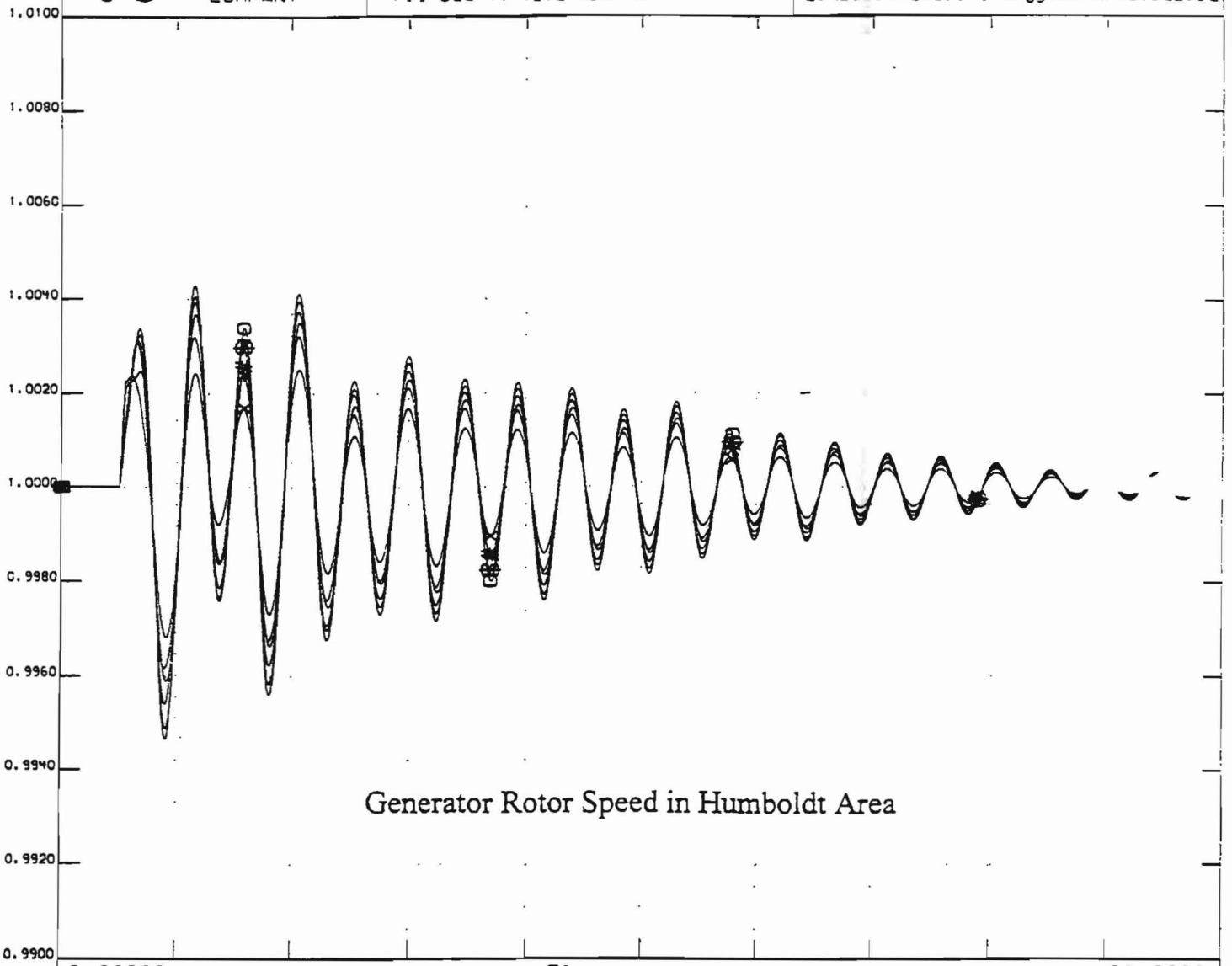

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0.9900	*	spd	31156 ULTRAPWR	12.47	1	1.0100
0.9900	#	spd	31160 HMBLT TT	12.00	1	1.0100
0.9900	X	spd	31162 MILL&MAT	9.11	1	1.0100
0.9900	$	spd	31170 HMBOLDT1	13.80	1	1.0100

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE

GENERAL ELECTRIC COMPANY

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Fri Dec 17 13:27:31 1999

basecaseoutg5.chf

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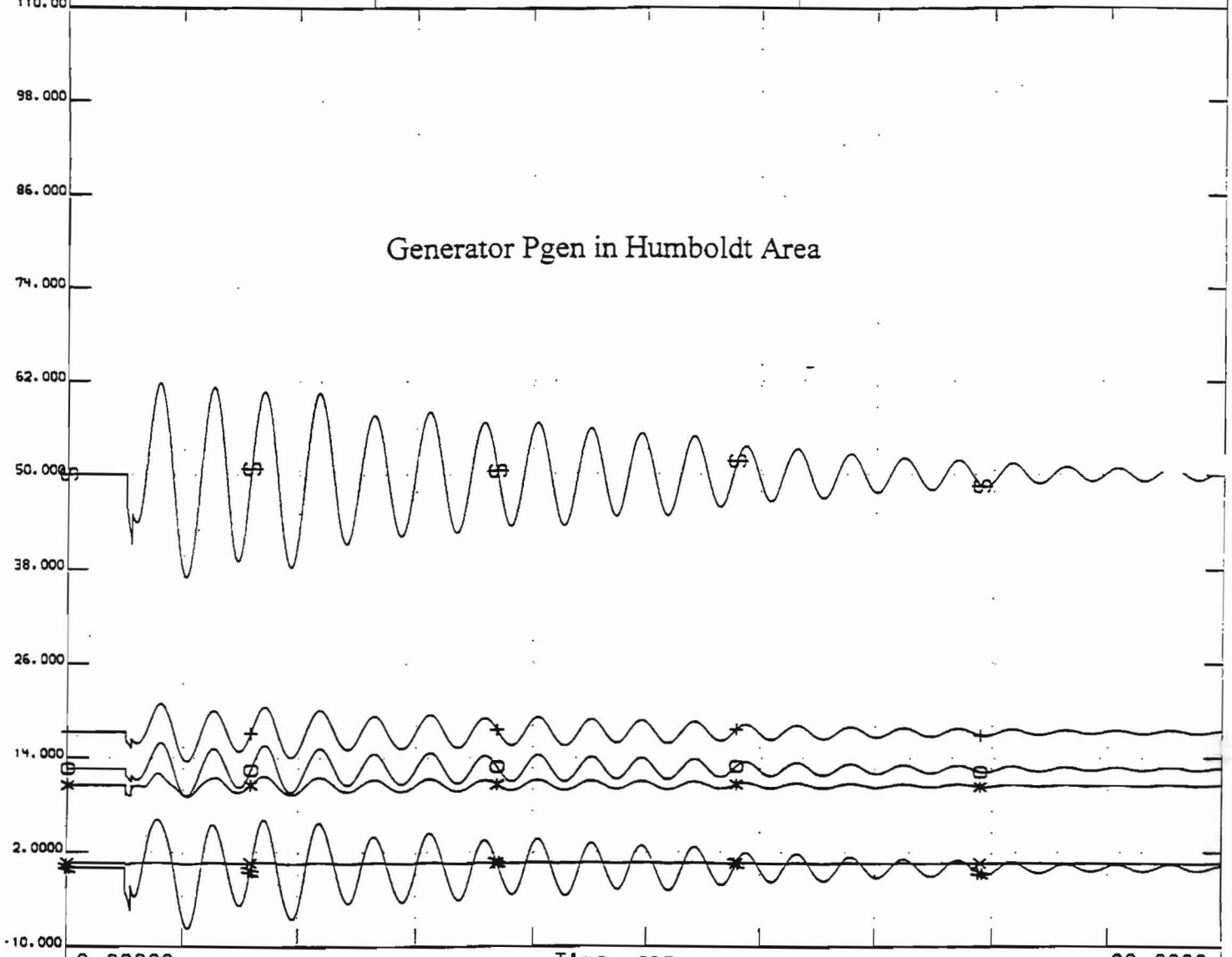

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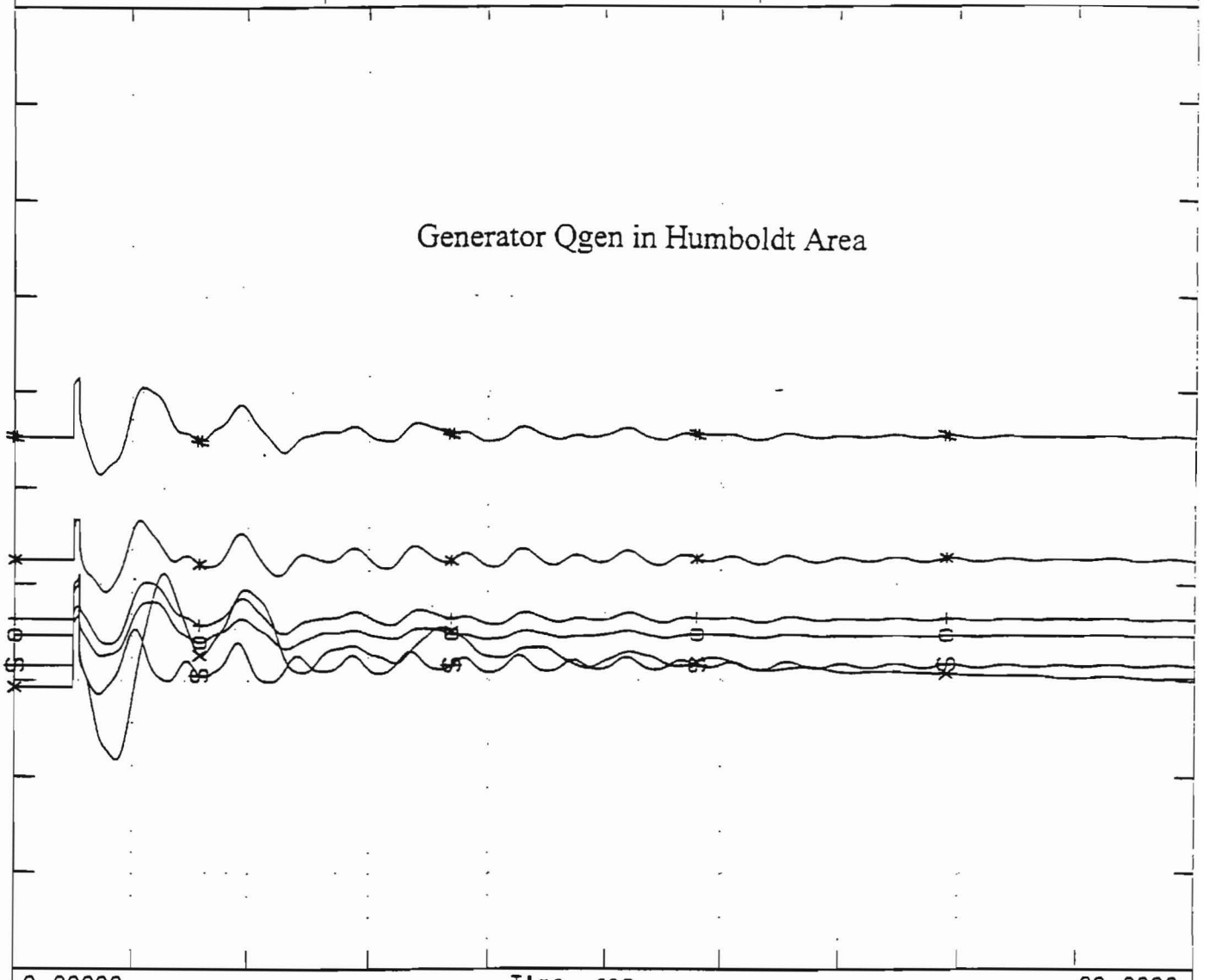
-10.00	+	PG	31152 PAC.LUMB	13.80	1	110.00
-10.00	*	PG	31156 ULTRAPWR	12.47	1	110.00
-10.00	#	PG	31160 HMBLT TT	12.00	1	110.00
-10.00	×	PG	31162 MILL&MAT	9.11	1	110.00
-10.00	⊗	PG	31170 HMBOLDT1	13.80	1	110.00

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE

GENERAL ELECTRIC COMPANY | 13 | basecaseoutg5.chf
Fri Dec 17 13:27:31 1999 | C:\Data\MetcalfEnergyCenter\BaseCase.



0.00000 Time, sec. 20.0000

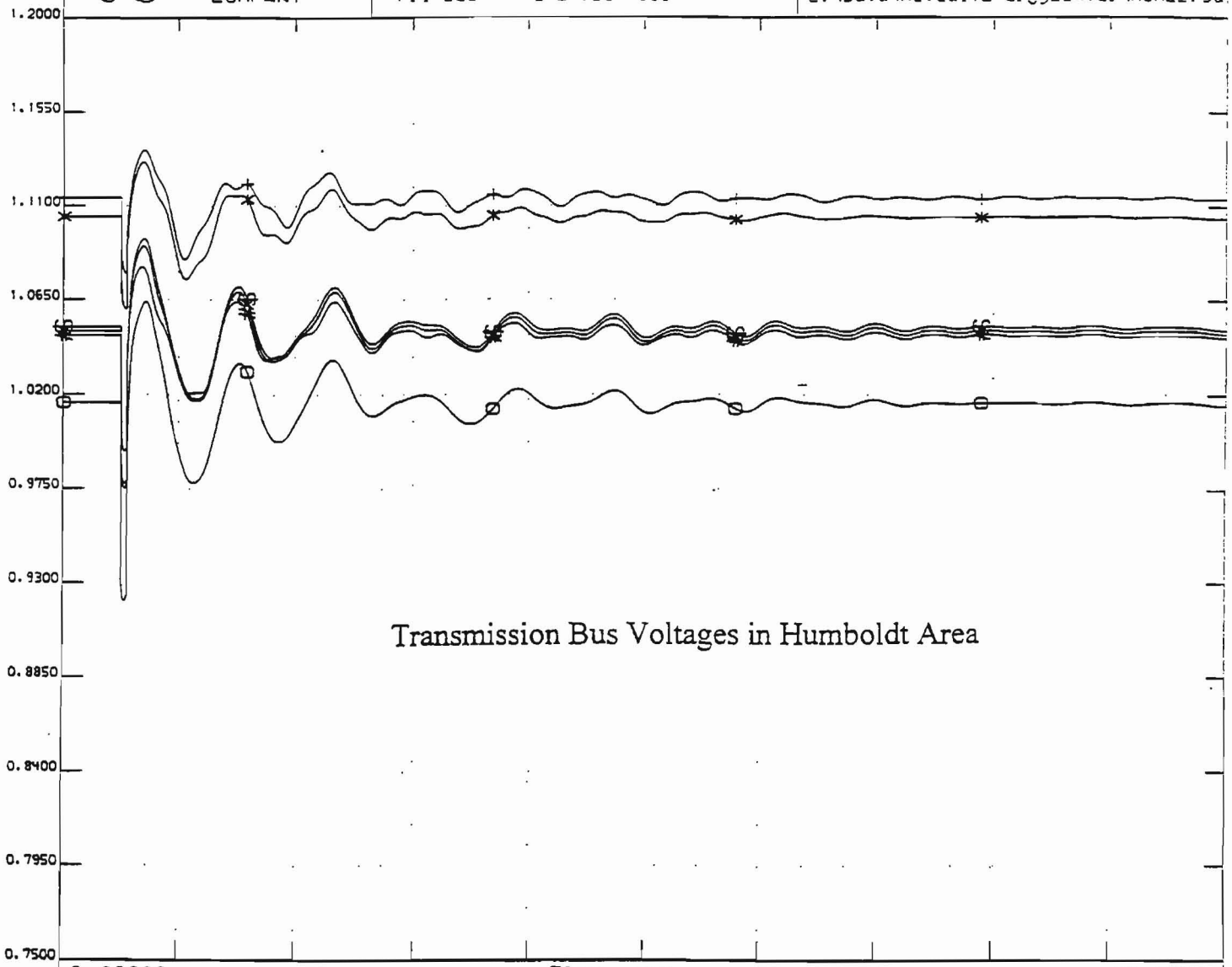
-9.500	O	99	31150	FAIRHAVN	13.80	1	28.500
-11.00	+	99	31152	PAC.LUMB	13.80	1	33.000
-6.500	*	99	31156	ULTRAPWR	12.47	1	19.500
-16.50	#	99	31160	HMBLT TT	12.00	1	49.500
-0.500	X	99	31162	MILL&MAT	9.11	1	1.5000
-25.50	$	99	31170	HMBOLDT1	13.80	1	76.500

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE

Attachment 6b:
Stability Plots
for
Loss of Newark-San Mateo 230 kV Circuit without 600 MW at Metcalf Energy Center

GENERAL ELECTRIC COMPANY | 1 | nomecoutgSa.chf

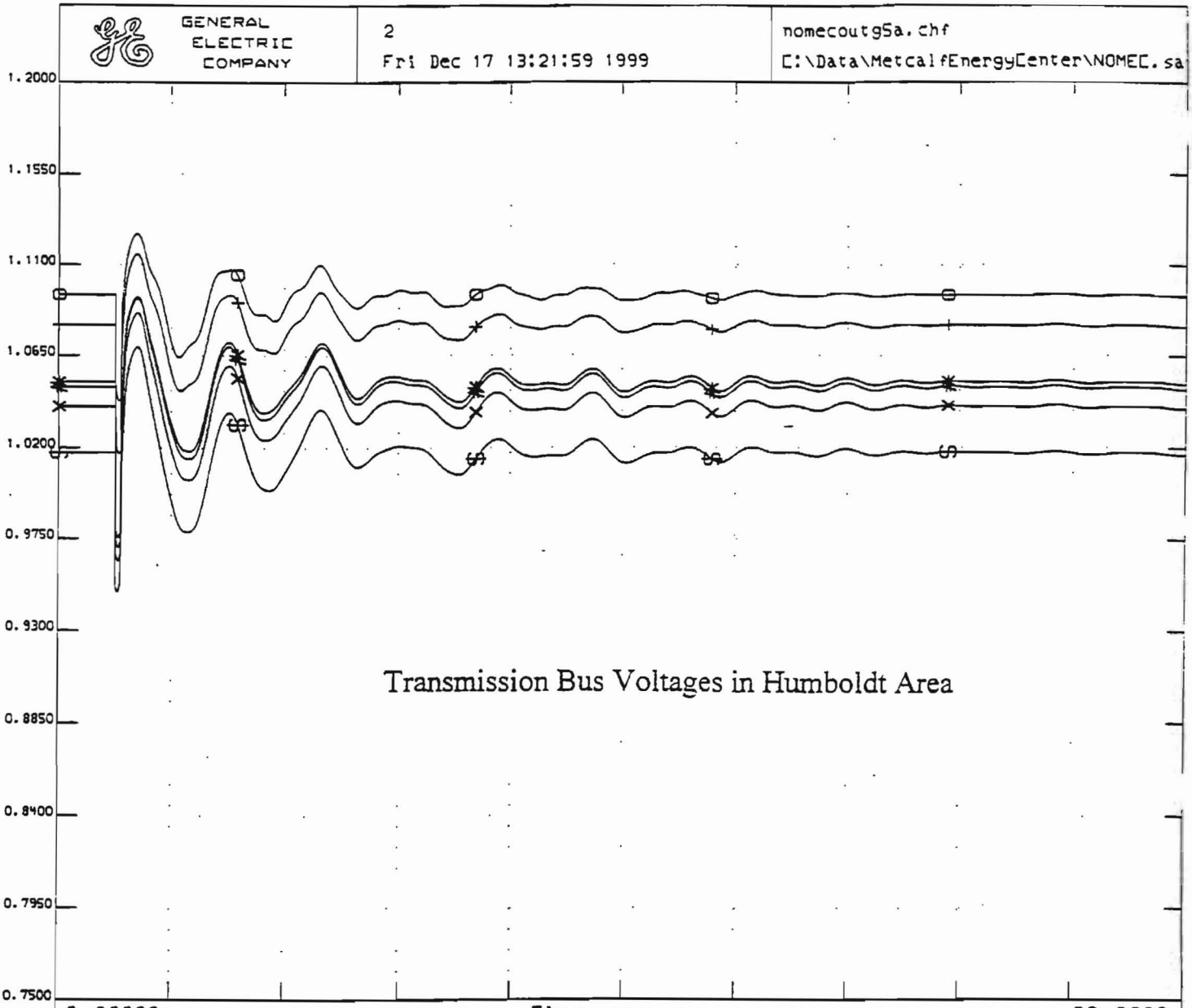
Fri Dec 17 13:21:58 1999 | C:\Data\MetcalfEnergyCenter\NOMEC.sa



0.00000 Time, sec. 20.0000

0.7500	○	vbus	30105 COTWDPGE 230.00	1	1.2000
0.7500	+	vbus	31000 HUMBOLDT 115.00	1	1.2000
0.7500	*	vbus	31015 BRDGVLLE 115.00	1	1.2000
0.7500	#	vbus	31452 TRINITY 115.00	1	1.2000
0.7500	×	vbus	31460 BNTN JCT 115.00	1	1.2000
0.7500	⊕	vbus	31462 SMPSN-AN 115.00	1	1.2000

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF



0.7500	○	vbul	31010 LOW GAP1	115.00	1	1.2000
0.7500	+	vbul	31450 WILDWOOD	115.00	1	1.2000
0.7500	*	vbul	31454 PANORAMP	115.00	1	1.2000
0.7500	#	vbul	31464 COTWDPGE	115.00	1	1.2000
0.7500	×	vbul	31466 JESSUP	115.00	1	1.2000
0.7500	⊗	vbul	31468 CASCADE	115.00	1	1.2000

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF

GENERAL ELECTRIC COMPANY

3

Fri Dec 17 13:22:00 1999

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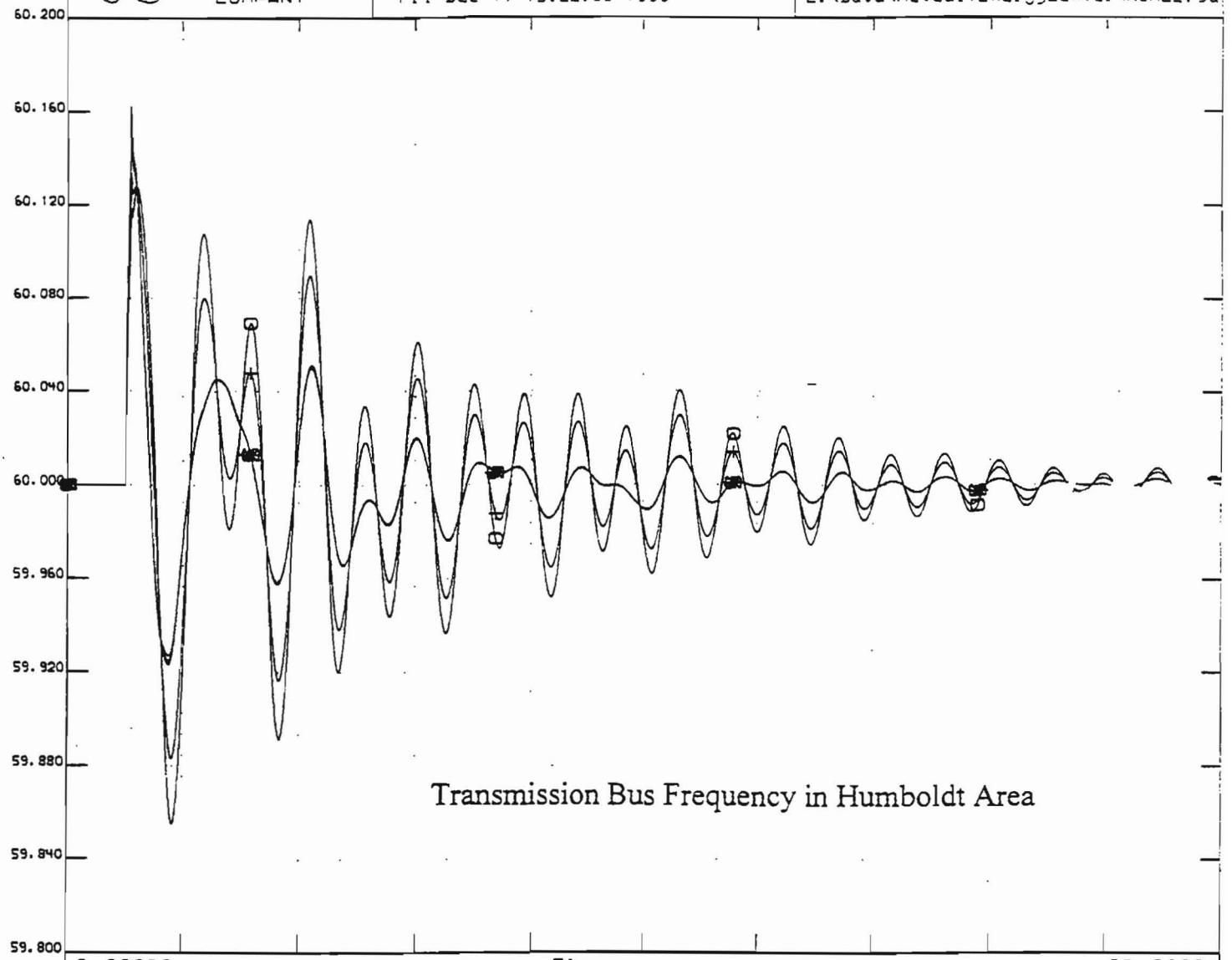

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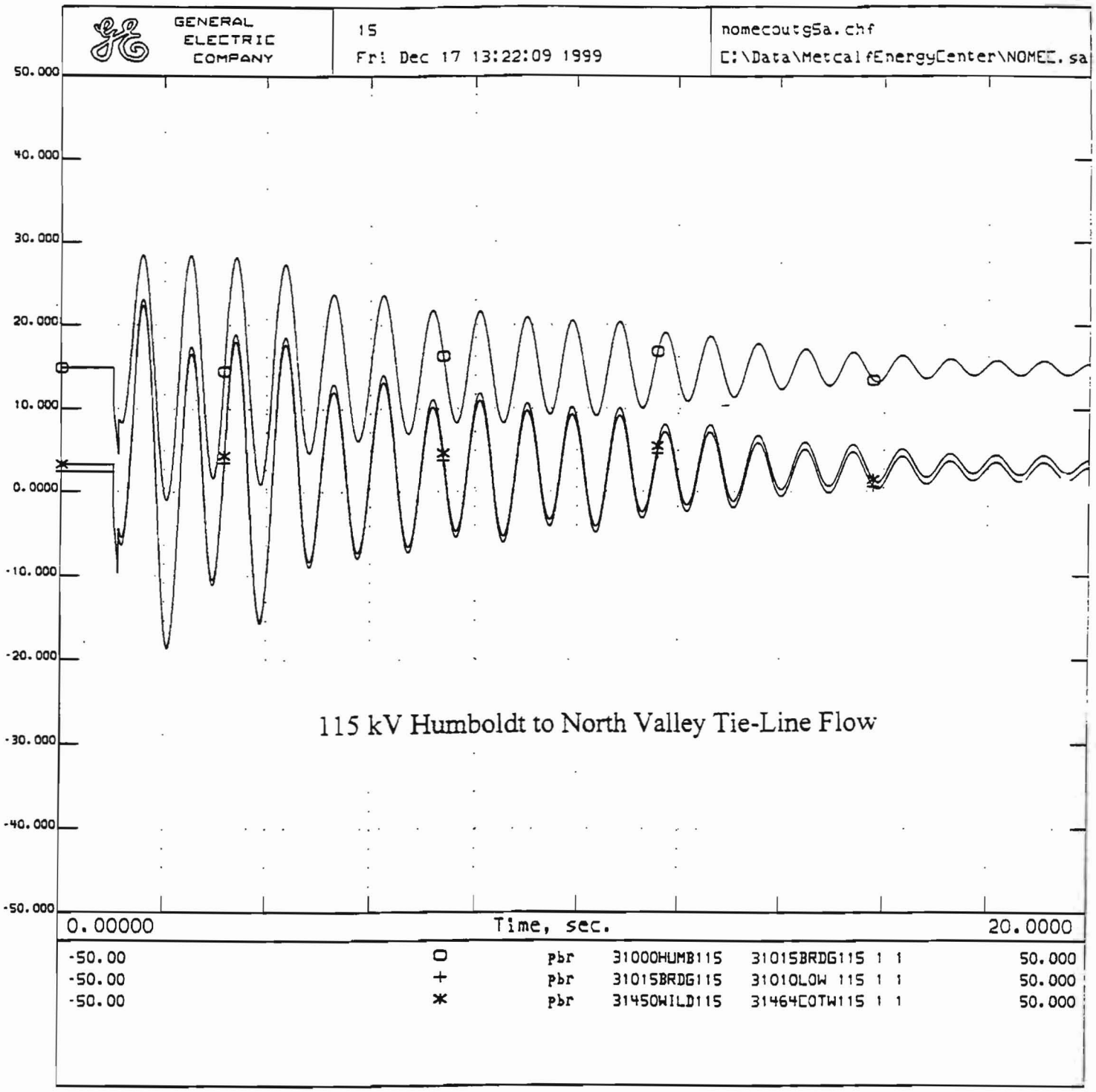
59.800	o	fbul	31010 LOW GAP1	115.00	1	60.200
59.800	+	fbul	31450 WILDWOOD	115.00	1	60.200
59.800	*	fbul	31454 PANORAMP	115.00	1	60.200
59.800	#	fbul	31464 COTWDPGE	115.00	1	60.200
59.800	x	fbul	31466 JESSUP	115.00	1	60.200
59.800	$	fbul	31468 CASCADE	115.00	1	60.200

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF



PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF

GENERAL ELECTRIC COMPANY

14

Fri Dec 17 13:22:08 1999

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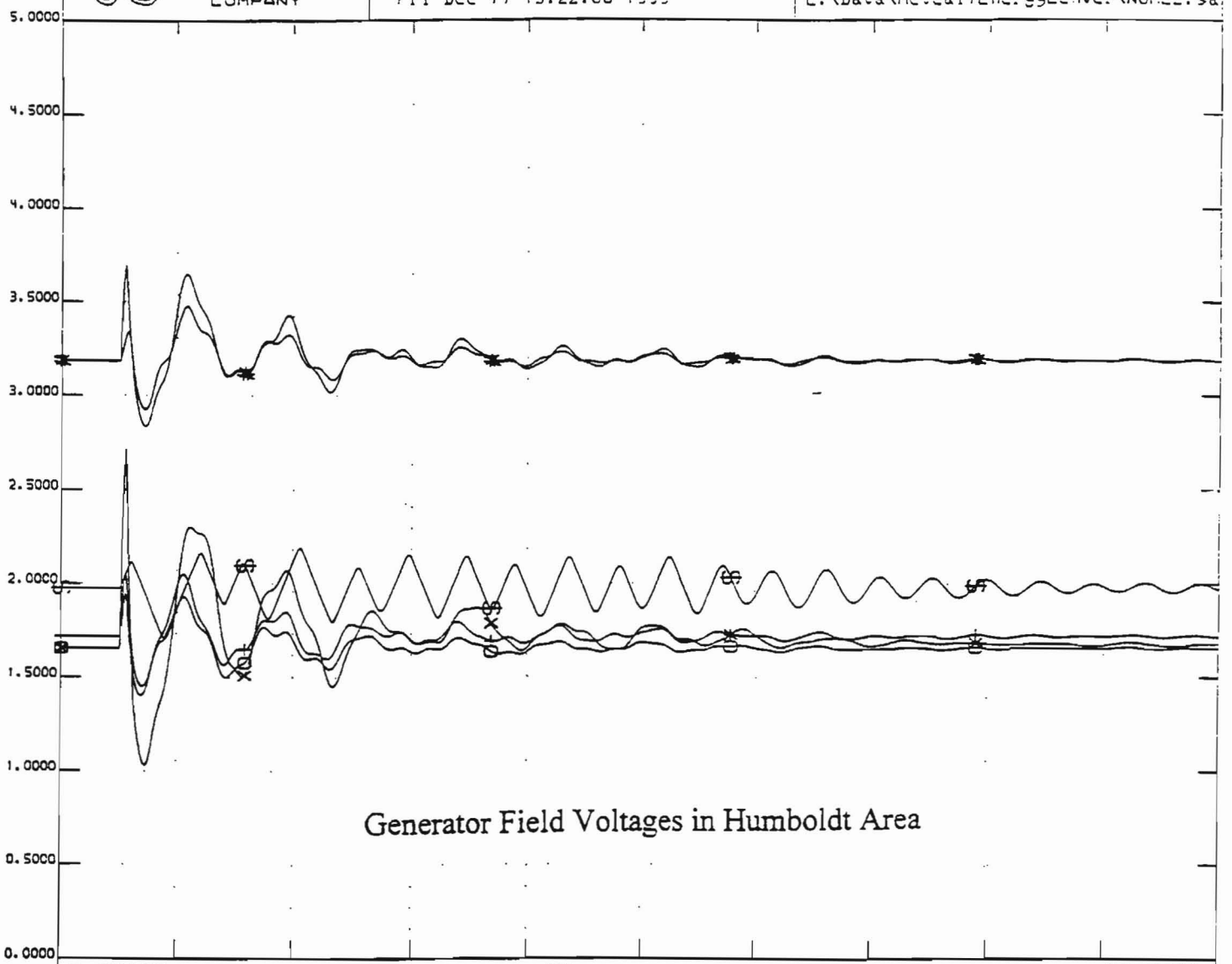

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0.0000	O	efd	31150	FAIRHAVN	13.80	1	5.0000
0.0000	+	efd	31152	PAC.LUMB	13.80	1	5.0000
0.0000	*	efd	31156	ULTRAPWR	12.47	1	5.0000
0.0000	#	efd	31160	HMBLT TT	12.00	1	5.0000
0.0000	X	efd	31162	MILL&MAT	9.11	1	5.0000
0.0000	$	efd	31170	HMBOLDT1	13.80	1	5.0000

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF

GENERAL ELECTRIC COMPANY

10

Fri Dec 17 13:22:05 1999

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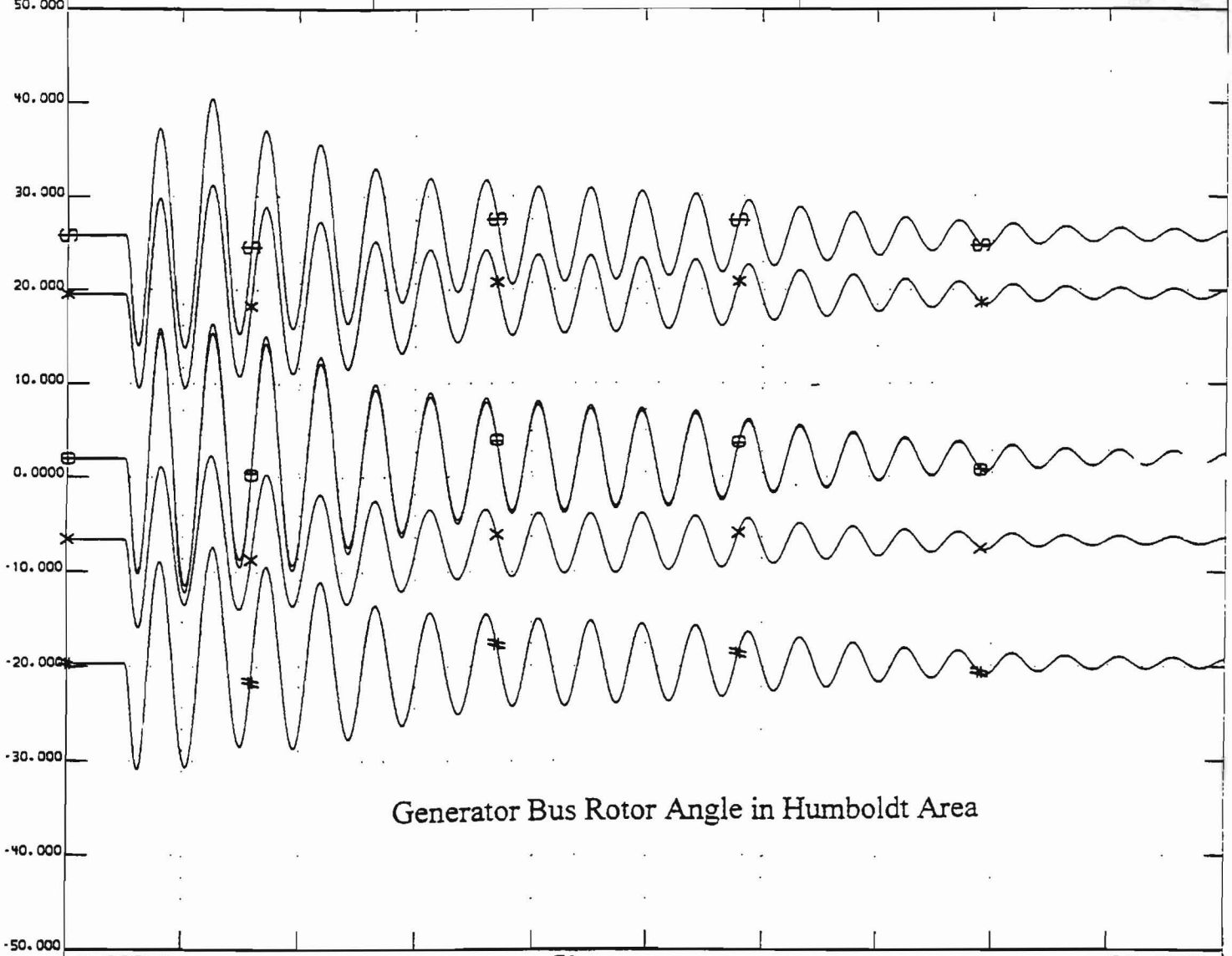

-50.00	O	ang	31150	FAIRHAVN	13.80	1	50.000
-50.00	+	ang	31152	PAC.LUMB	13.80	1	50.000
-50.00	*	ang	31156	ULTRAPWR	12.47	1	50.000
-50.00	#	ang	31160	HMBLT TT	12.00	1	50.000
-50.00	X	ang	31162	MILL&MAT	9.11	1	50.000
-50.00	$	ang	31170	HMBOLDT1	13.80	1	50.000

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF

GENERAL ELECTRIC COMPANY

11

Fri Dec 17 13:22:06 1999

nomecoutg5a.chf

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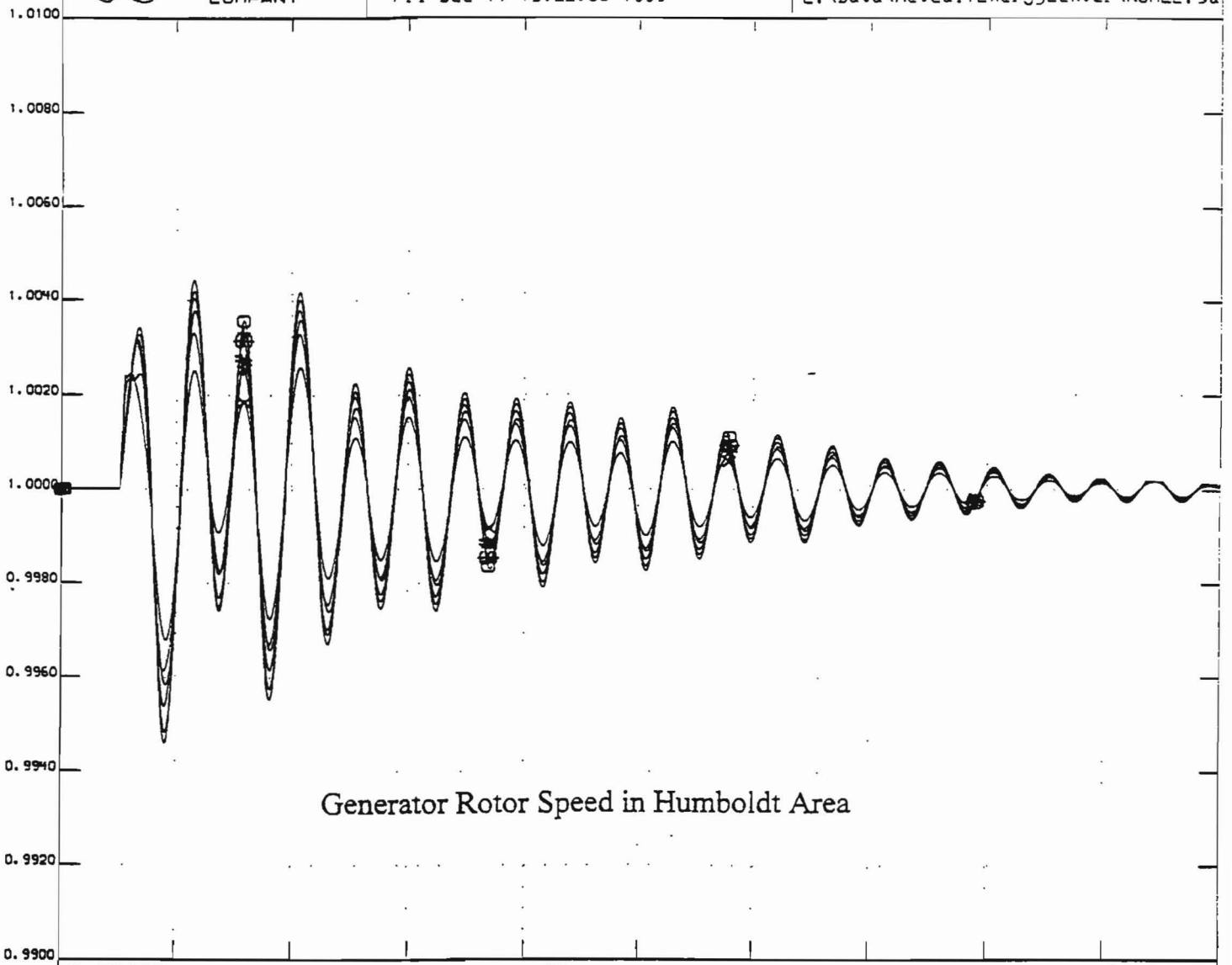

0.00000	Time, sec.					20.0000
0.9900	o	spd	31150 FAIRHAVN	13.80	1	1.0100
0.9900	+	spd	31152 PAC.LUMB	13.80	1	1.0100
0.9900	*	spd	31156 ULTRAPWR	12.47	1	1.0100
0.9900	#	spd	31160 HMBLT TT	12.00	1	1.0100
0.9900	x	spd	31162 MILL&MAT	9.11	1	1.0100
0.9900	$	spd	31170 HMBOLDT1	13.80	1	1.0100

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF

GENERAL ELECTRIC COMPANY

12

Fri Dec 17 13:22:07 1999

nomecoutg5a.chf

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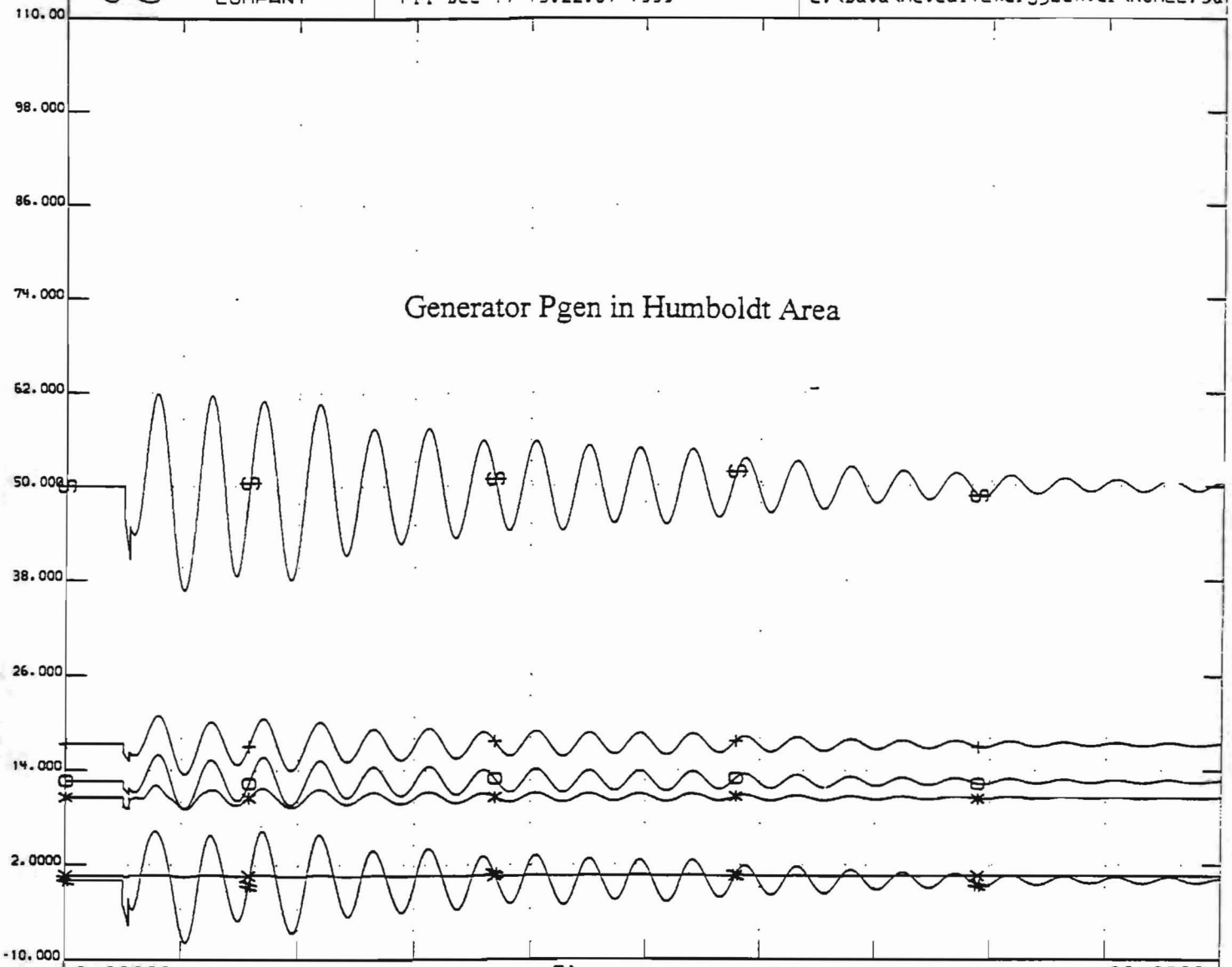
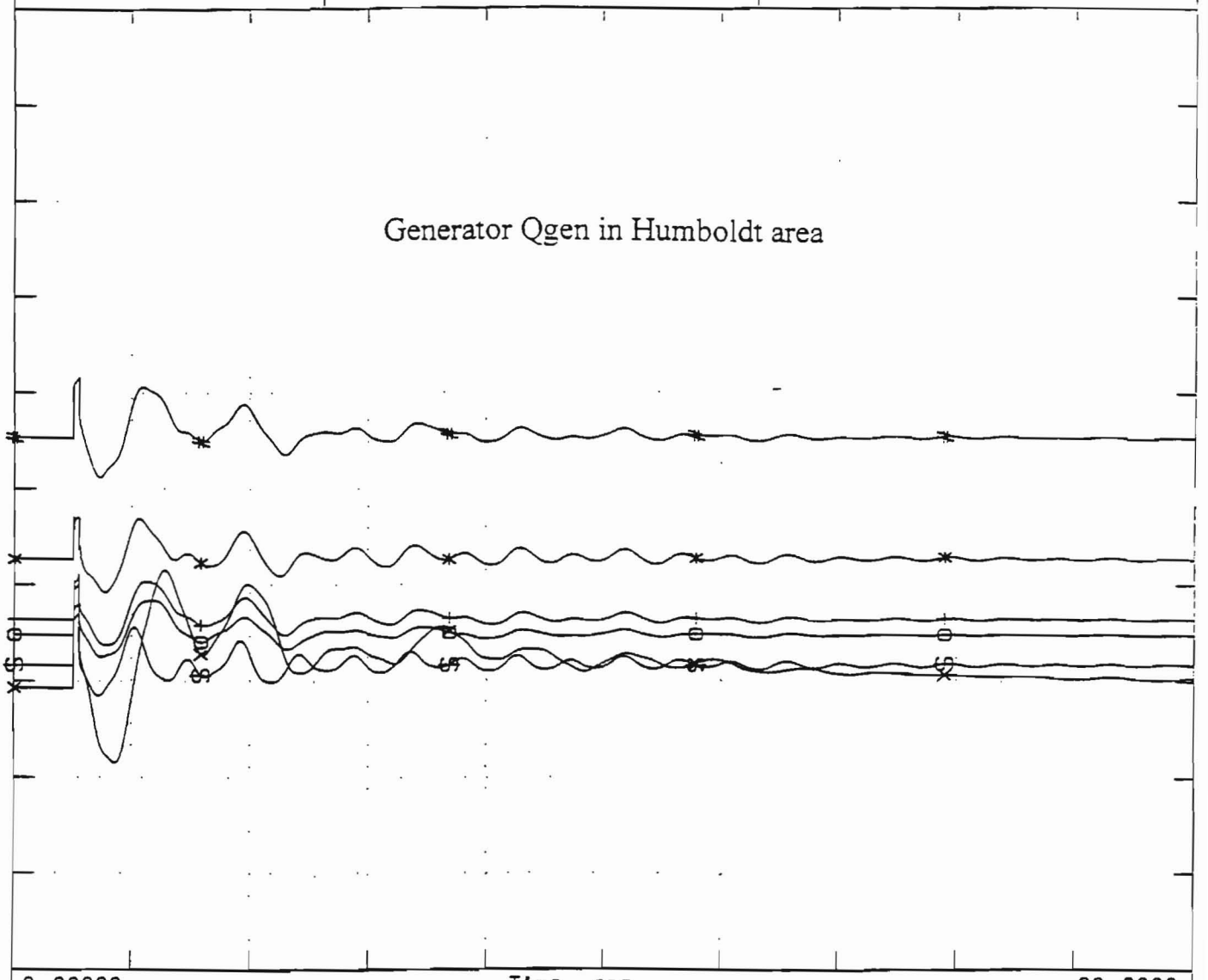


-10.00	○	PG	31150 FAIRHAVN	13.80	1	110.00
-10.00	+	PG	31152 PAC.LUMB	13.80	1	110.00
-10.00	*	PG	31156 ULTRAPWR	12.47	1	110.00
-10.00	#	PG	31160 HMBLT TT	12.00	1	110.00
-10.00	×	PG	31162 MILL&MAT	9.11	1	110.00
-10.00	⊗	PG	31170 HMBOLDT1	13.80	1	110.00

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF

GENERAL ELECTRIC COMPANY	13 Fri Dec 17 13:22:08 1999	nomecoutg5a.chf C:\Data\MetcalfEnergyCenter\NOMEC.sa



-9.500	o	qg	31150	FAIRHAVN	13.80	1	28.500
-11.00	+	qg	31152	PAC.LUMB	13.80	1	33.000
-6.500	*	qg	31156	ULTRAPWR	12.47	1	19.500
-16.50	#	qg	31160	HMBLT TT	12.00	1	49.500
-0.500	x	qg	31162	MILL&MAT	9.11	1	1.5000
-25.50	$	qg	31170	HMBOLDT1	13.80	1	76.500

PROJECT: METCALF ENERGY CENTER STUDY
CASE: 2003 HEAVY SUMMER MUST-RUN BASE CASE FROM CALIFORNIA ISO
OUTAGE: FLT NEWARK 230KV BUS (6 CYC)+TRIP NEWARK-SAN MATEO 230KV LINE
MEC TURNED OFF

Attachment 7:
Stability Plots
for
Simulated Disturbances:

Attachment 7 - Stability Plots for Simulated Disturbances :

a. Loss of the Metcalf - Tesla 500 kV circuit due to a fault (Level B disturbance).

b. Loss of the Metcalf-Moss Landing 500 kV circuit due to a fault (Level B disturbance).

c. Loss of the Metcalf 500/230 kV transformer bank #12 due to a fault (Level B disturbance).

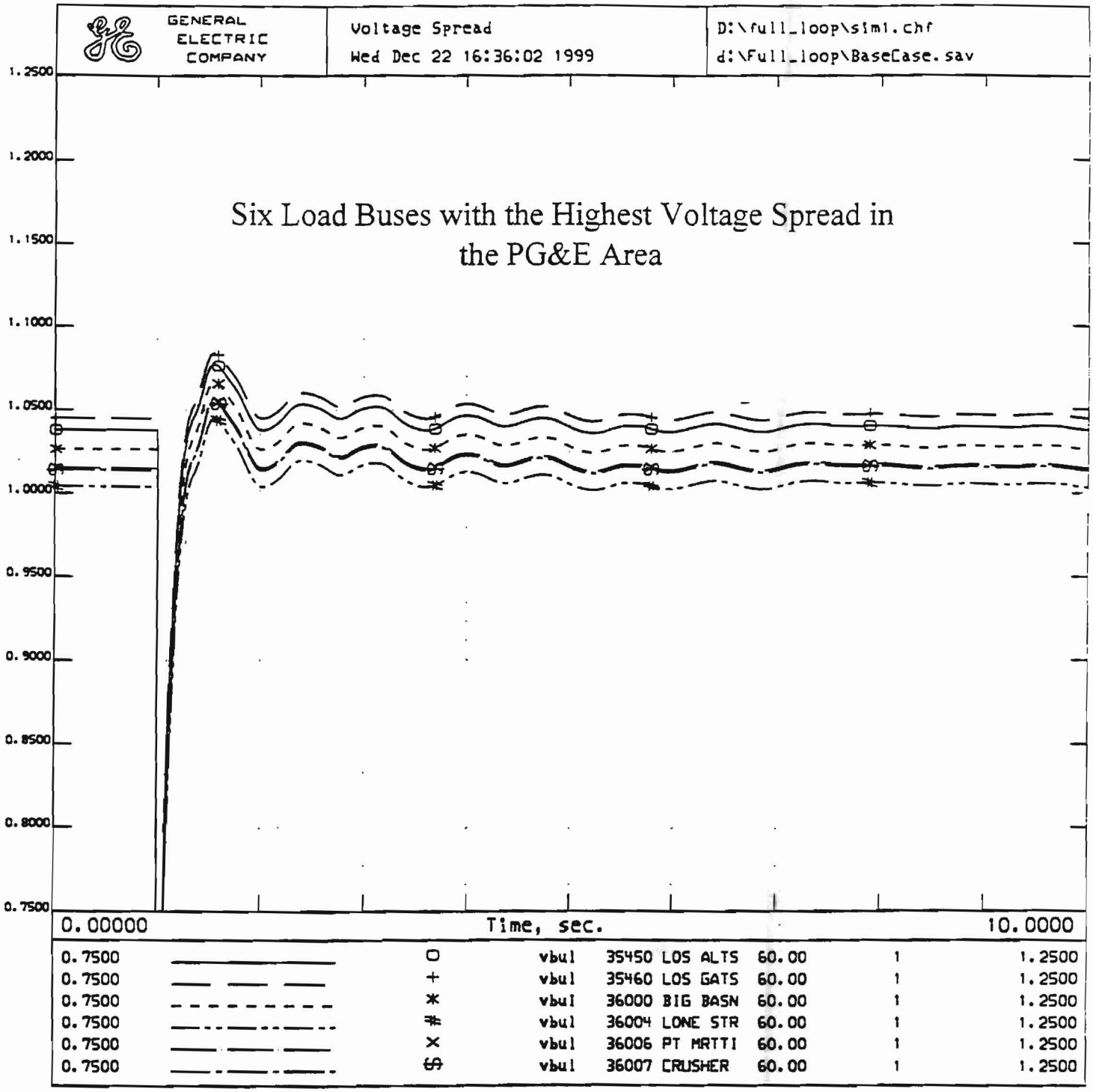
d. Loss of the Moss Landing-Green Valley Double Circuit Tower Lines due to a fault (Level C disturbance).

e. Loss of the Monta Vista 230 kV Bus #2 due to a fault (Level C disturbance).

f. Loss of the Newark Bus Section D with a circuit breaker (CB 200) failure due to a fault (Level D disturbance).

Attachment 7a:
Stability Plots
for

Loss of the Metcalf - Tesla 500 kV circuit due to a fault (Level B disturbance)



2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by the Loss of the METCALF-TESLA 500 kV circuit

GENERAL ELECTRIC COMPANY

Frequency Spread
Wed Dec 22 16:36:34 1999

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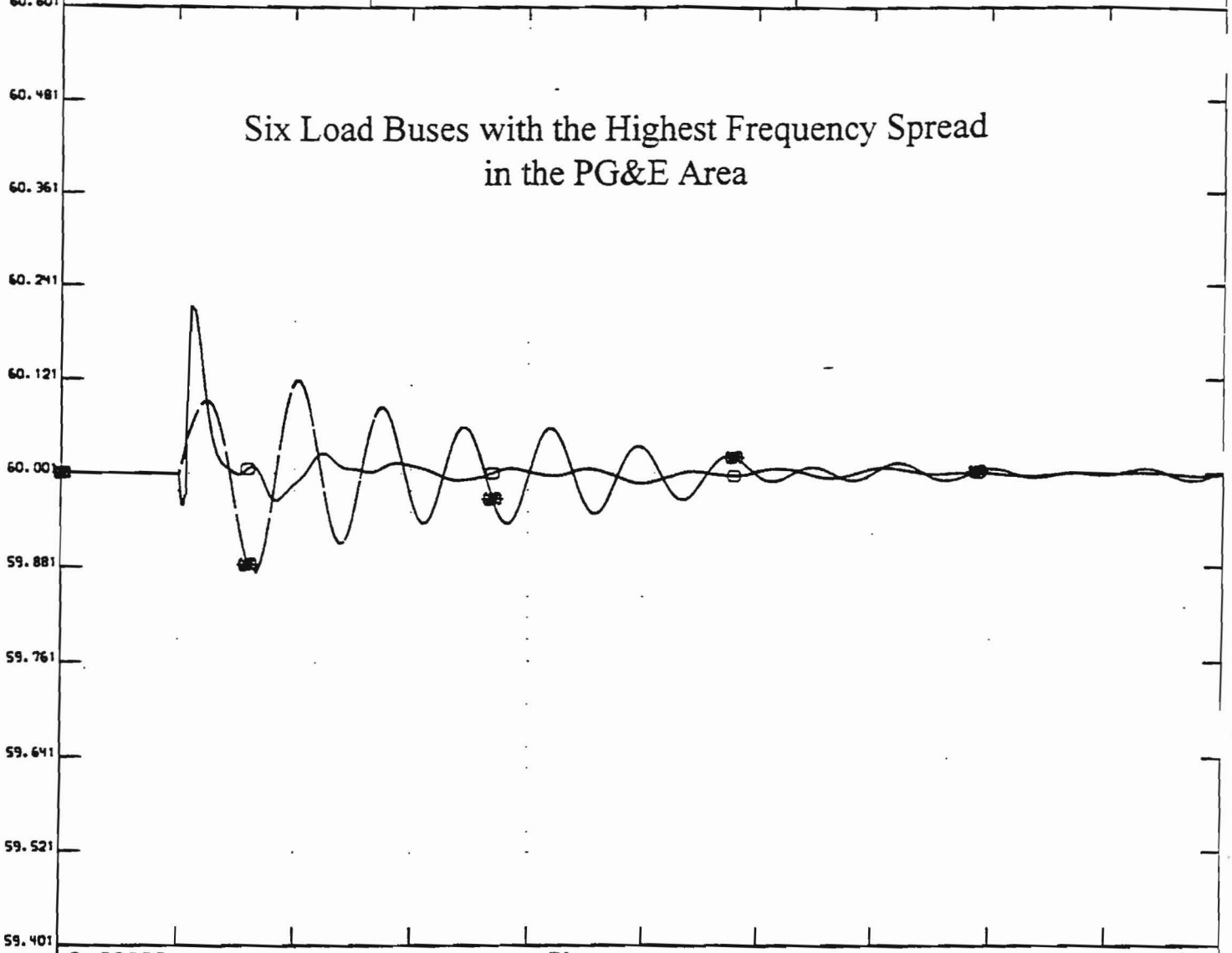
d:\Full_loop\BaseCase.sav



59.401	———	○	fbul	36004	LONE STR	60.00	1	60.601
59.401	— — —	+	fbul	36900	RICHMOND	60.00	1	60.601
59.401	- - - - - - - - -	*	fbul	36902	MEADOWVW	60.00	1	60.601
59.401	—-—-—-—	#	fbul	36904	MILLWOOD	60.00	1	60.601
59.401	—— —— ——	×	fbul	36908	JELD-WEN	60.00	1	60.601
59.401	—-—-—	⊗	fbul	36930	CHESTNUT	14.40	1	60.601

2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the Loss of the METCALF-TESLA 500 kV circuit

GENERAL ELECTRIC COMPANY

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Wed Dec 22 16:23:01 1999

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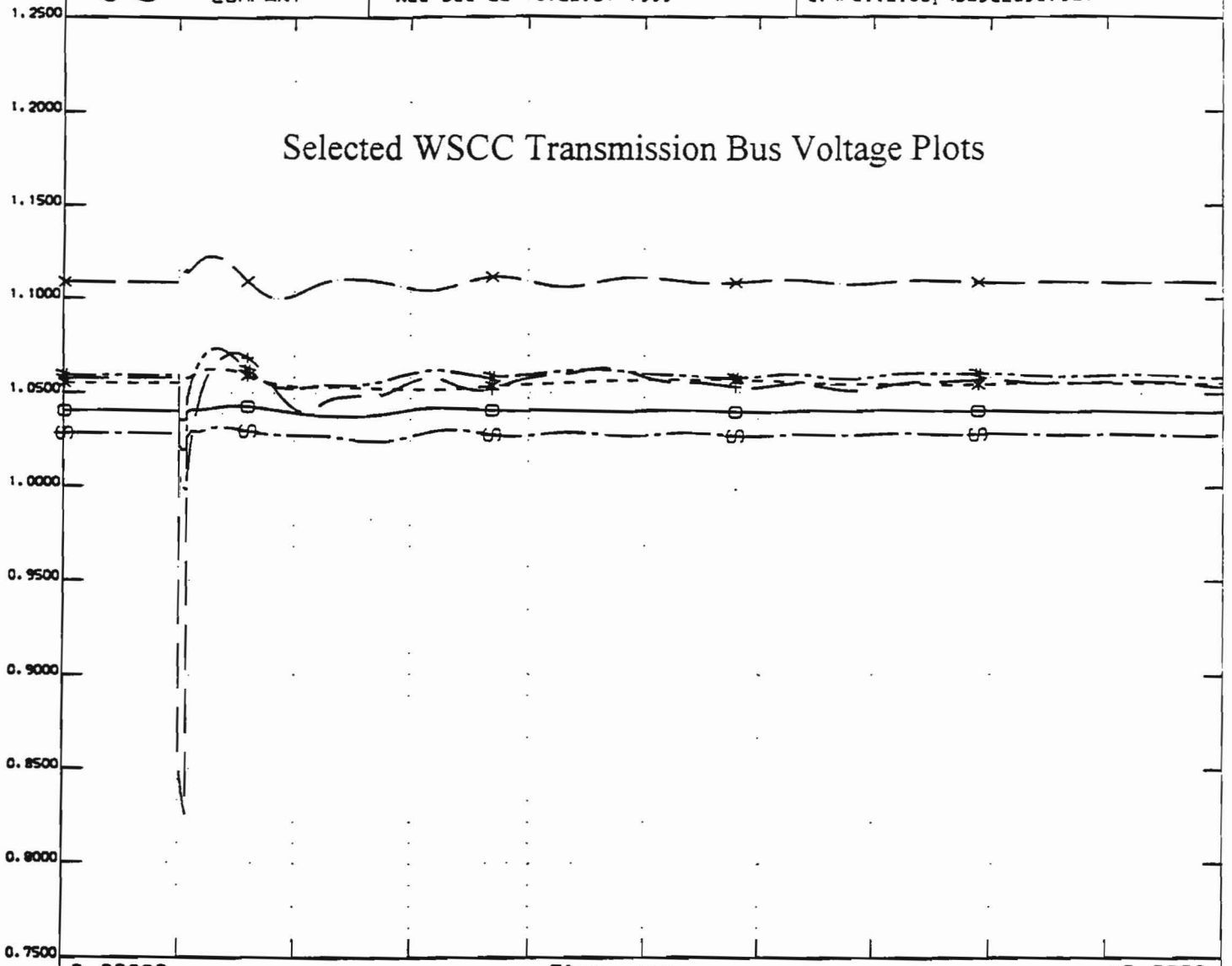
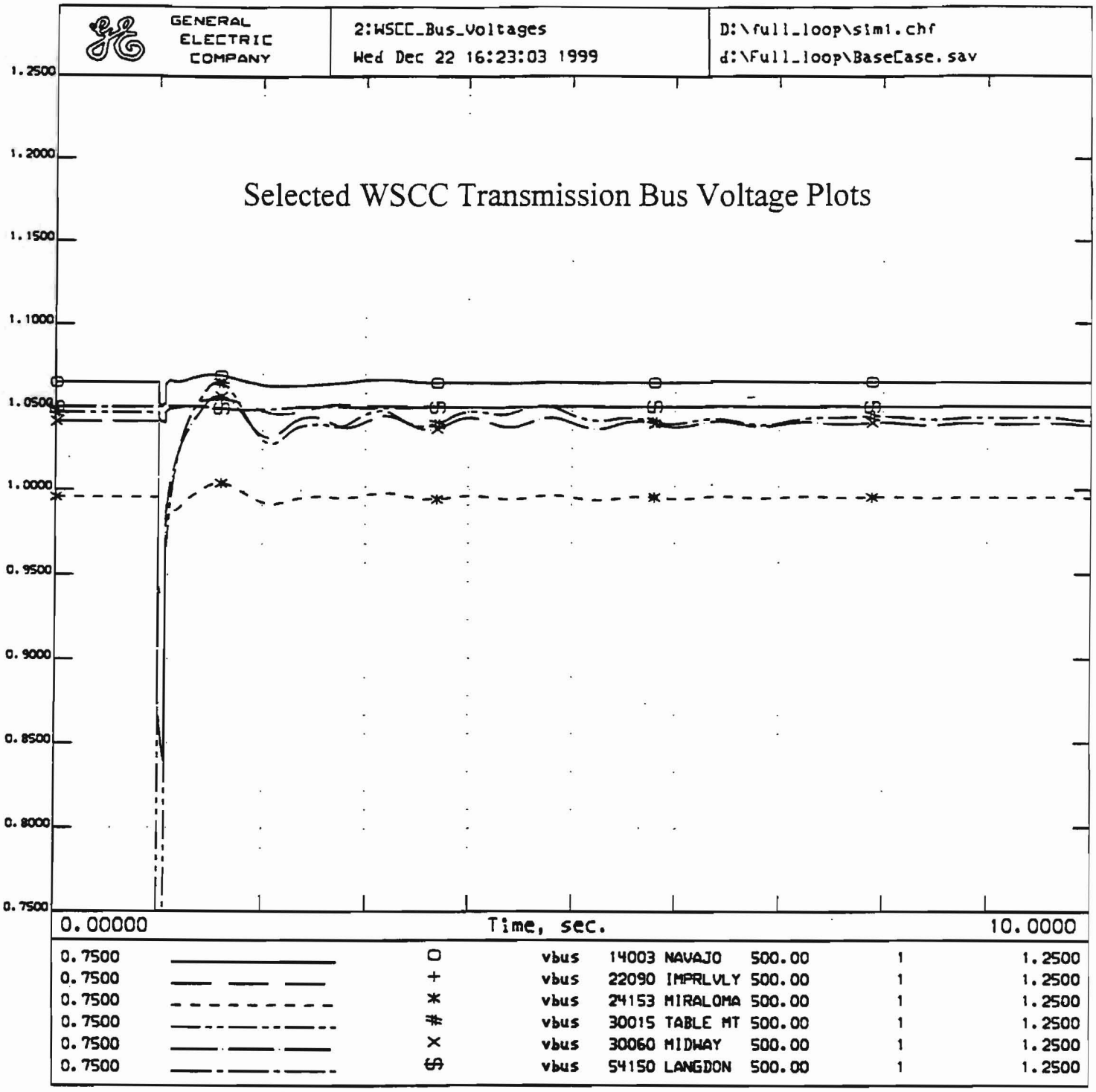


0.7500	———	O	vbus	14001	FOURCORN	500.00	1	1.2500
0.7500	— — —	+	vbus	40687	MALIN	500.00	1	1.2500
0.7500	- - - - -	*	vbus	50662	NIC500	500.00	1	1.2500
0.7500	—·—·—	#	vbus	60240	MIDPOINT	500.00	1	1.2500
0.7500	— — —	×	vbus	62012	TOWN2	500.00	1	1.2500
0.7500	—·—·—	$	vbus	66340	SIGURD	345.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the Loss of the METCALF-TESLA 500 kV circuit



2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the Loss of the METCALF-TESLA 500 kV circuit

GENERAL ELECTRIC COMPANY

3:WSCC_Bus_Frequency
Wed Dec 22 16:23:04 1999

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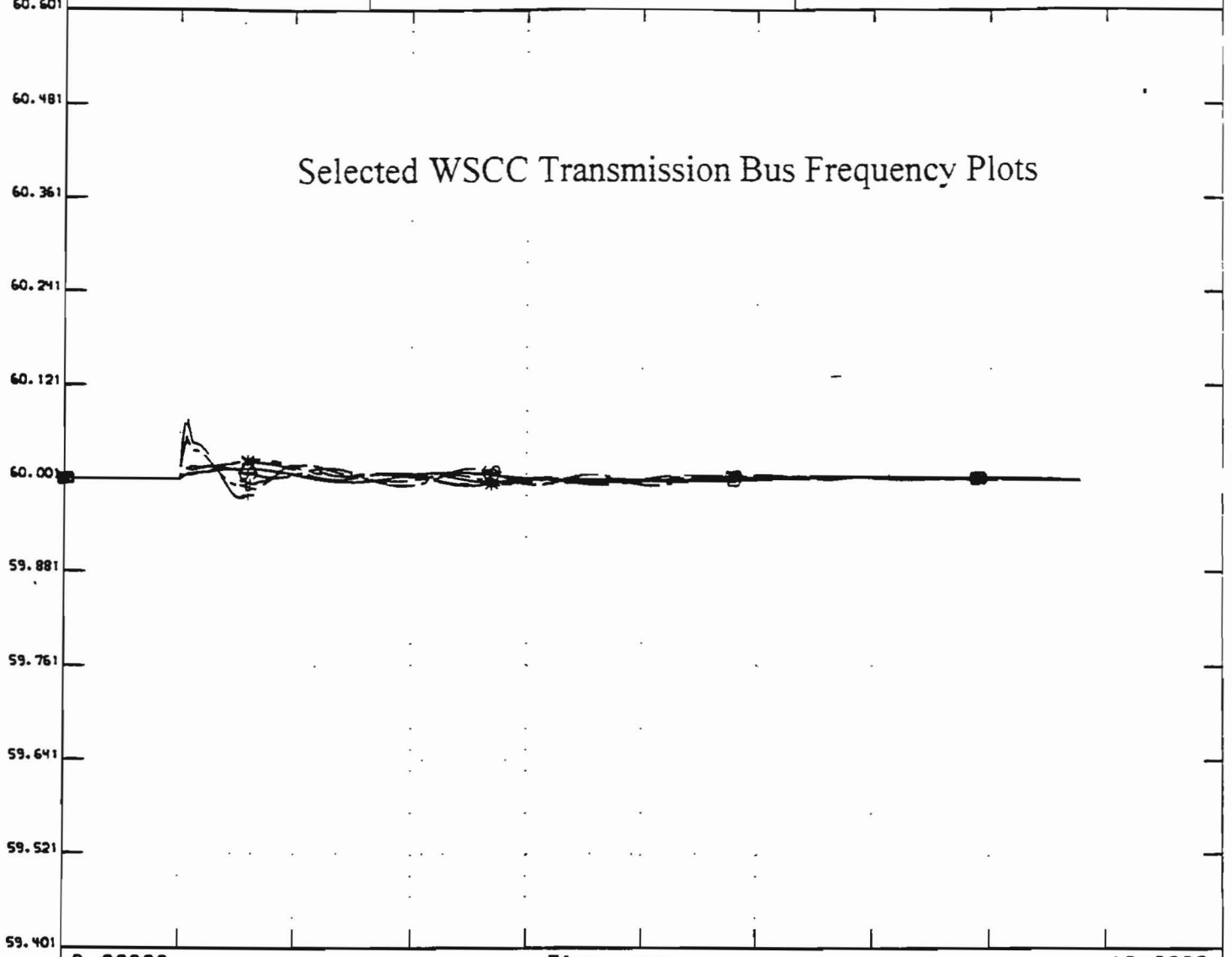
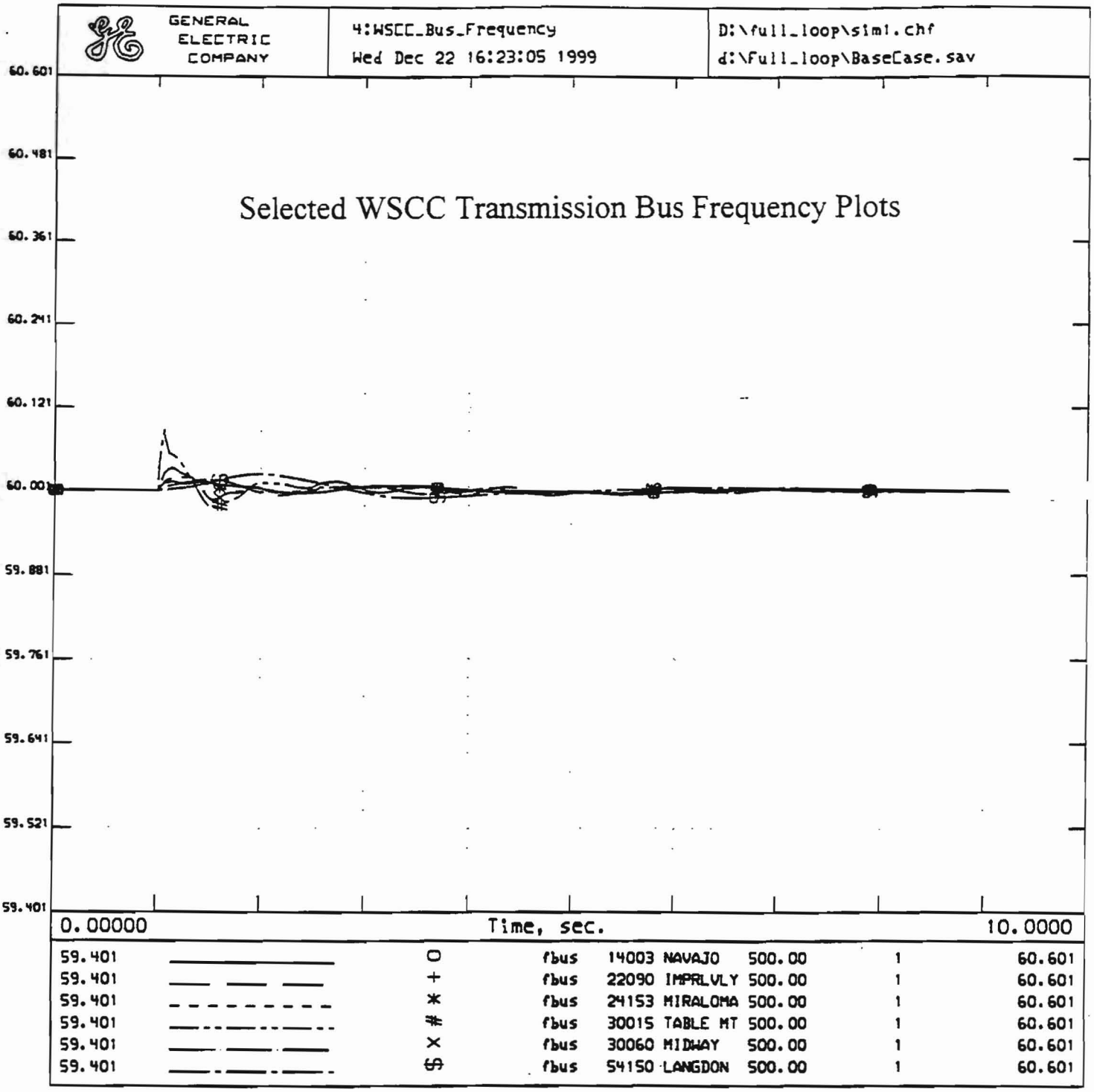


59.401	———	○	fbus	14001	FOURCORN	500.00	1	60.601
59.401	— — —	+	fbus	40687	MALIN	500.00	1	60.601
59.401	- - - - -	*	fbus	50662	NIC500	500.00	1	60.601
59.401	—-—-—	#	fbus	60240	MIDPOINT	500.00	1	60.601
59.401	—.—.—	×	fbus	62012	TOWN2	500.00	1	60.601
59.401	—.—.—	⊗	fbus	66340	SIGURD	345.00	1	60.601

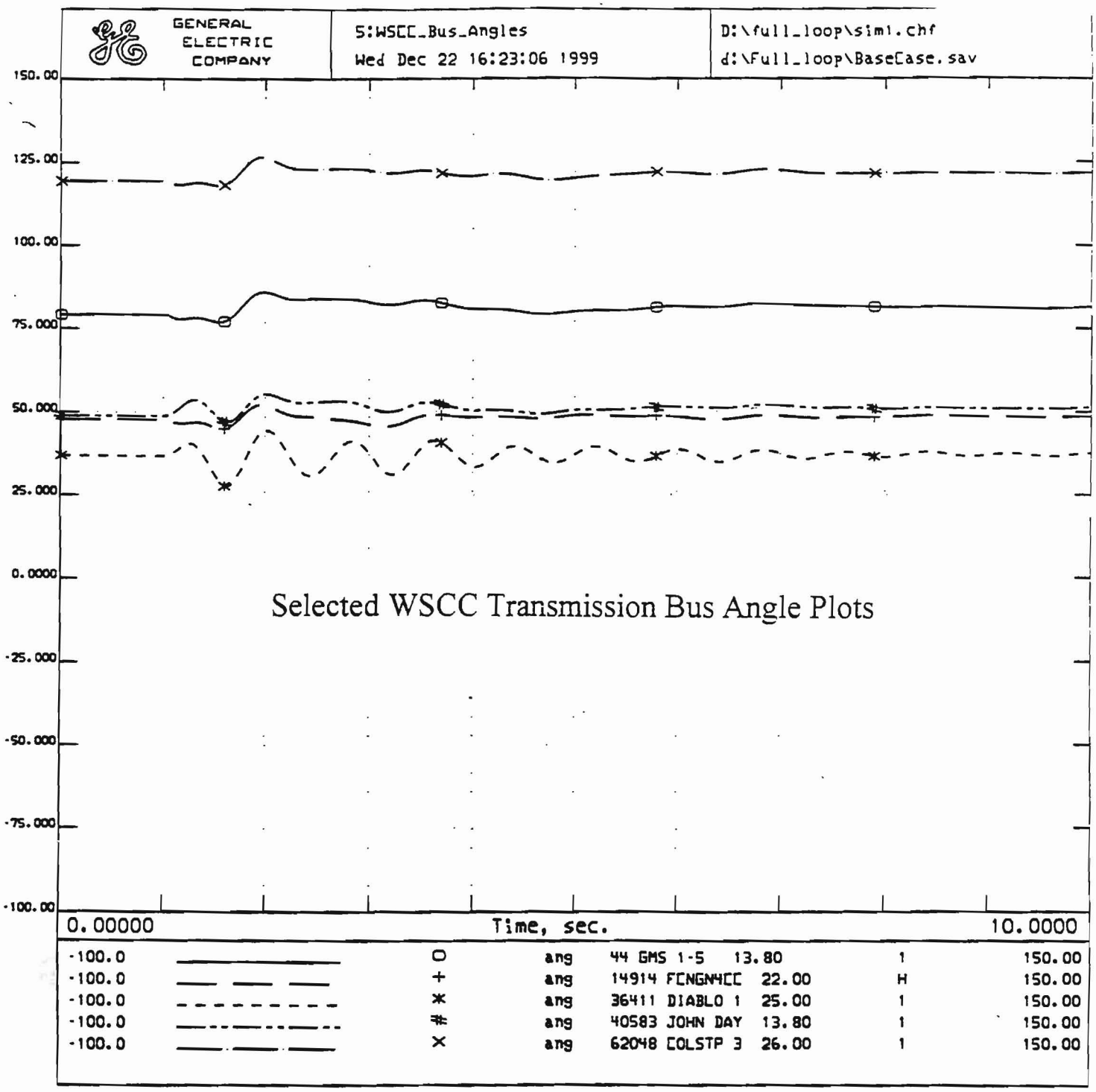
2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by the Loss of the METCALF-TESLA 500 kV circuit



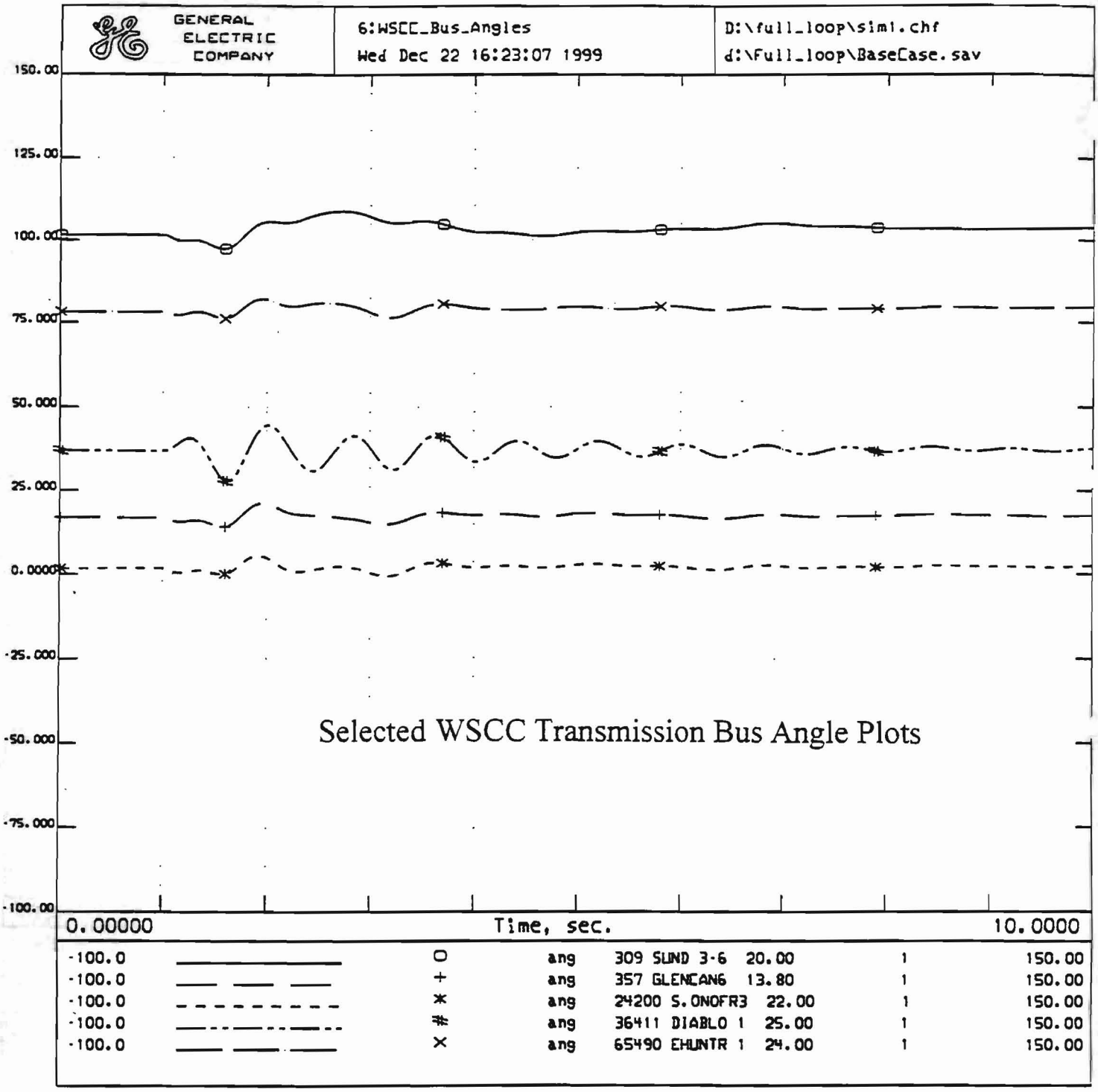
2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by the Loss of the METCALF-TESLA 500 kV circuit



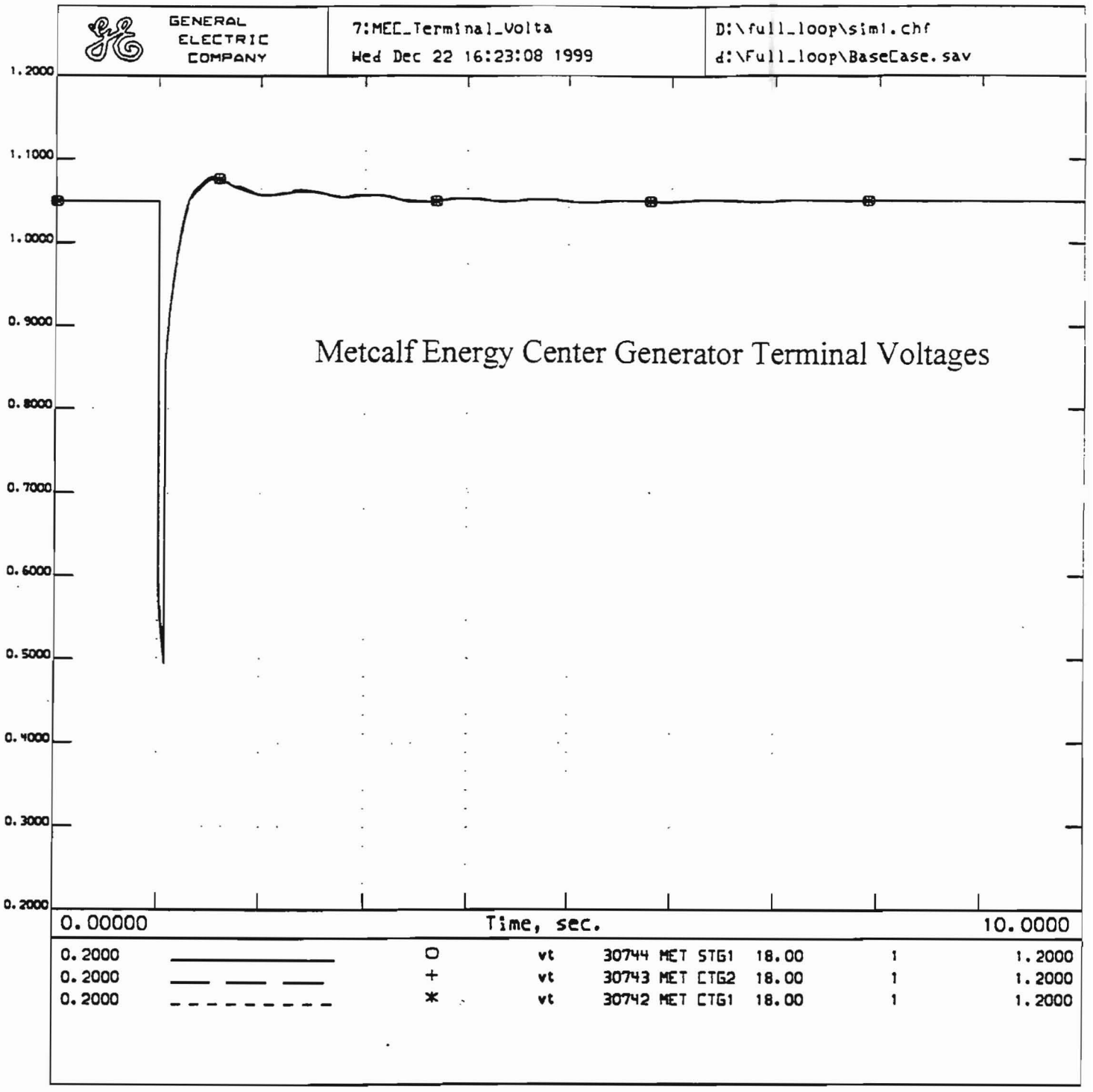
2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the Loss of the METCALF-TESLA 500 kV circuit



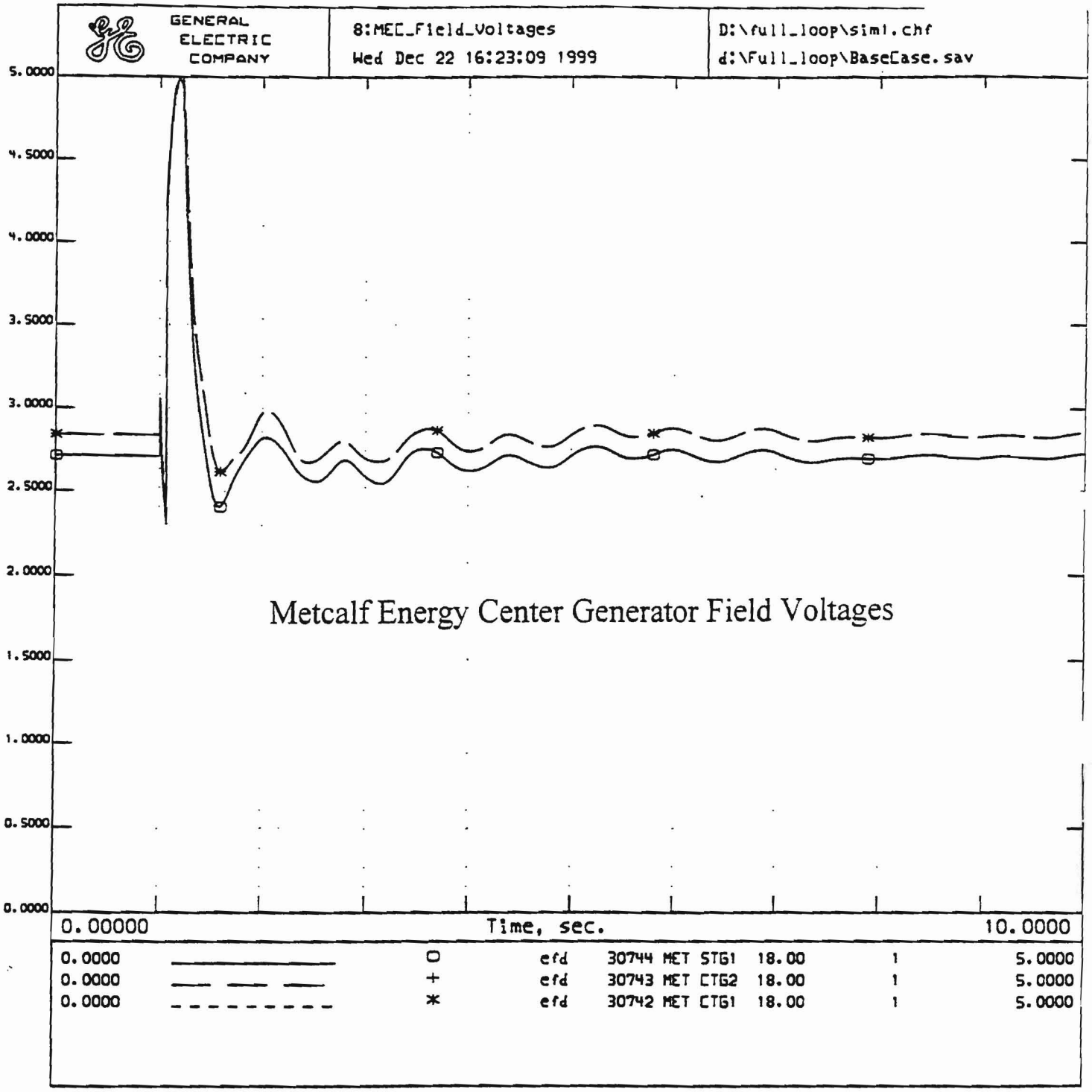
2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the Loss of the METCALF-TESLA 500 kV circuit



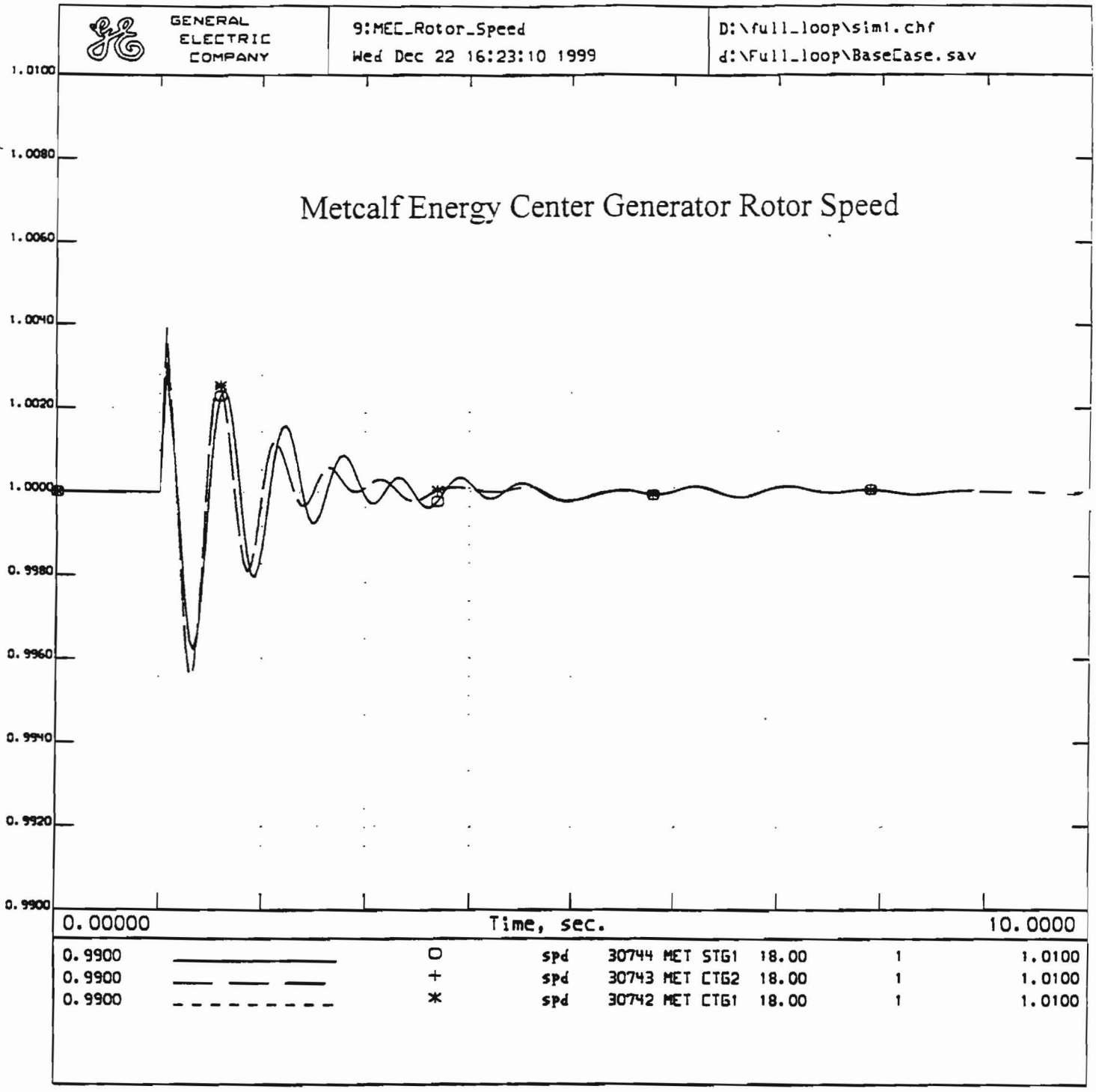
2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by the Loss of the METCALF-TESLA 500 kV circuit



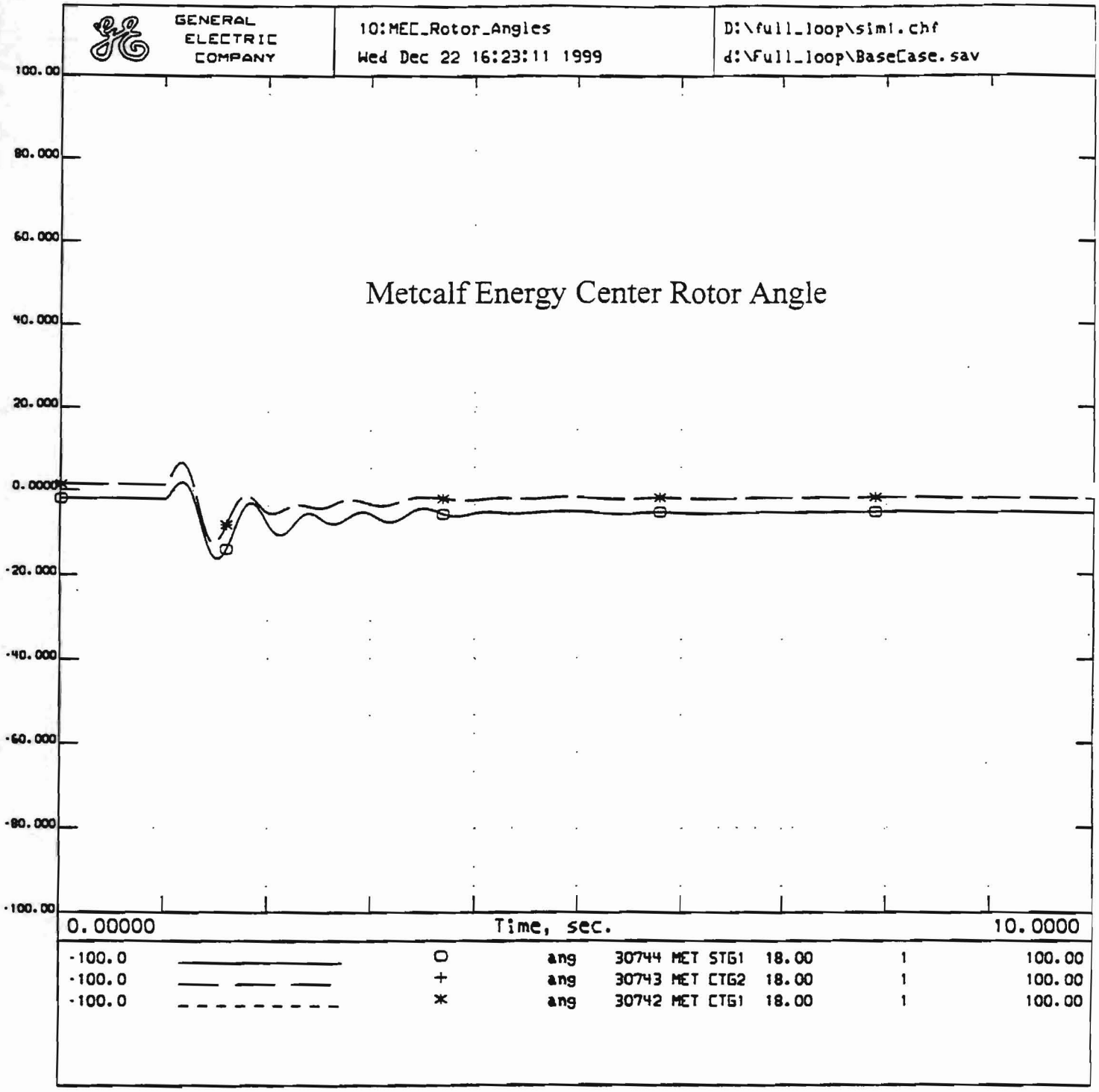
2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by the Loss of the METCALF-TESLA 500 kV circuit



2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by the Loss of the METCALF-TESLA 500 kV circuit



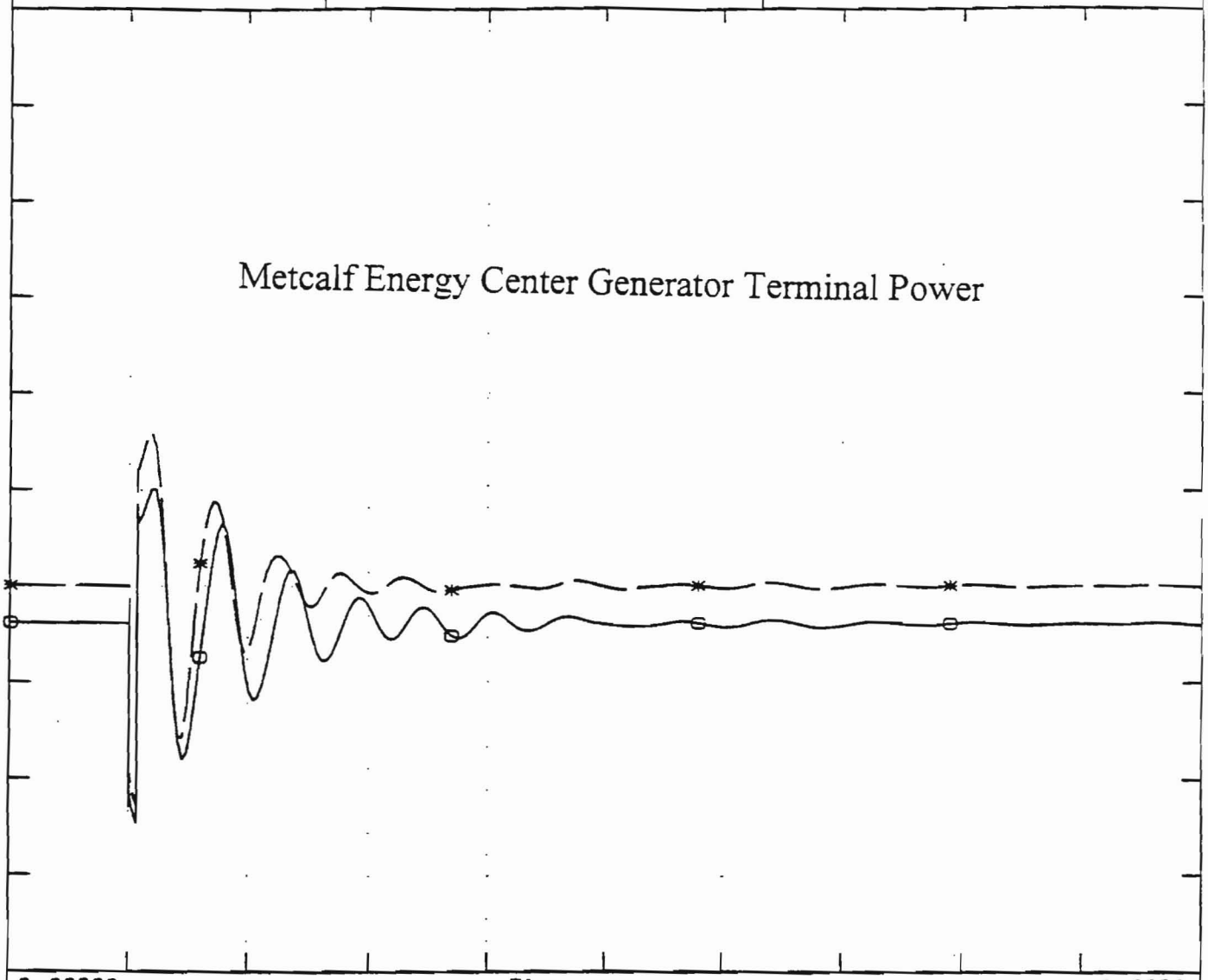
2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the Loss of the METCALF-TESLA 500 kV circuit

GENERAL ELECTRIC COMPANY

11:MEC_Terminal_Powe
Wed Dec 22 16:23:11 1999

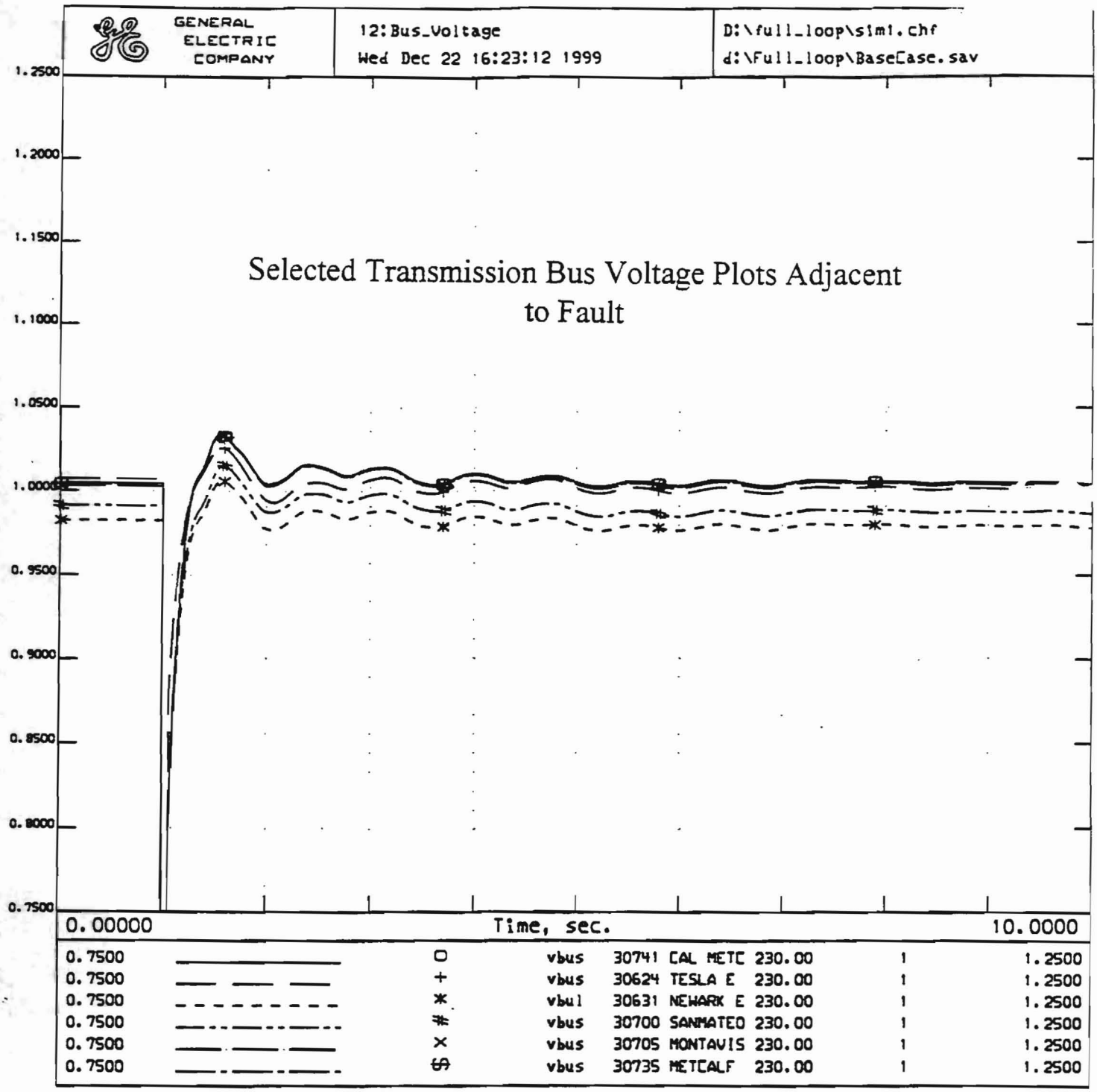
D:\full_loop\simi.chf
d:\Full_loop\BaseCase.sav



0.0000	————	o	PG	30744 MET STG1	18.00	1	554.00
0.0000	— — —	+	PG	30743 MET CTG2	18.00	1	500.00
0.0000	- - - - - - - - -	*	PG	30742 MET CTG1	18.00	1	500.00

2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by the Loss of the METCALF-TESLA 500 kV circuit



2003 Heavy Summer
MEC Additional Studies

(N-1): 3-phase fault at Metcalf 500 kV bus followed by the Loss of the METCALF-TESLA 500 kV circuit

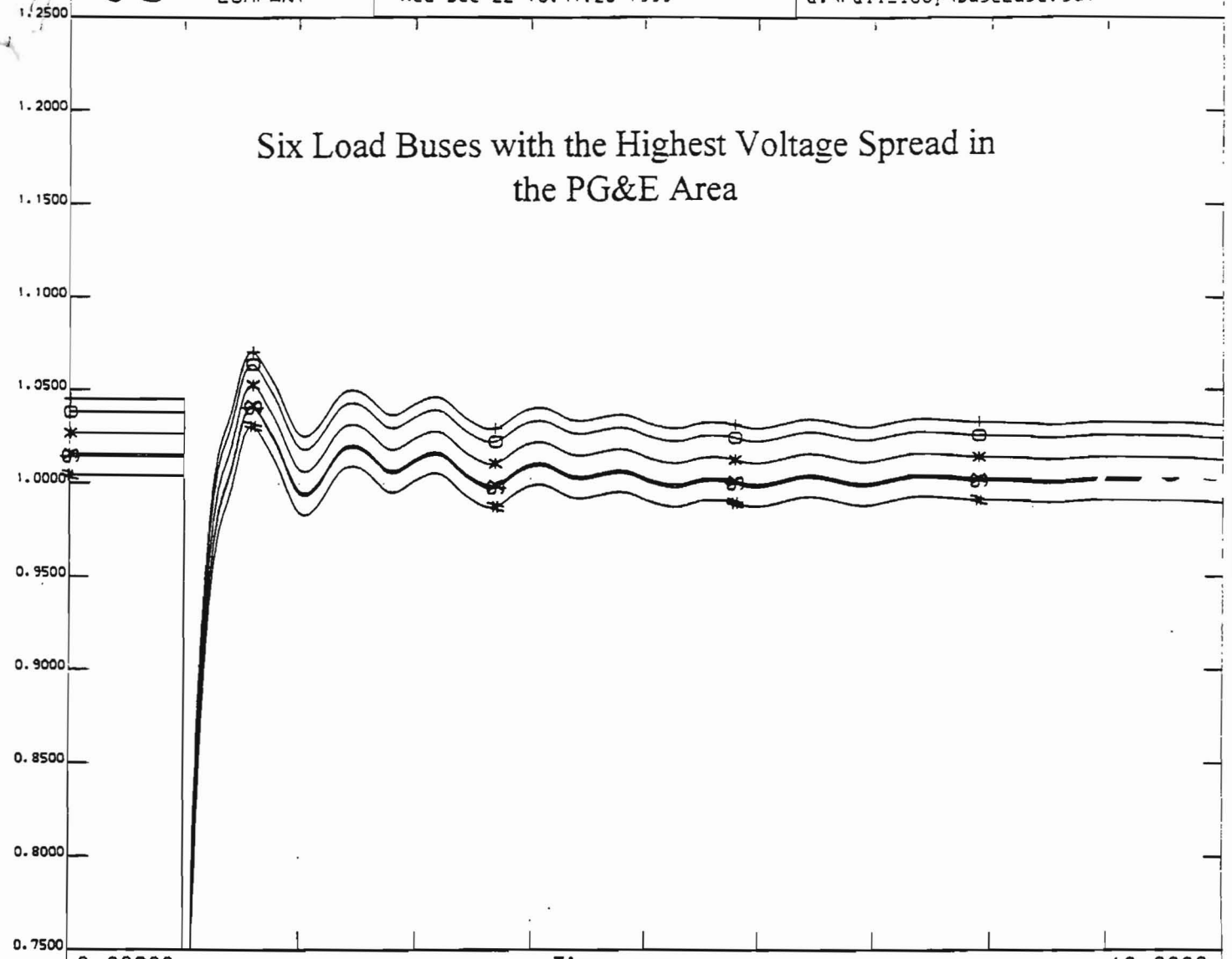
Attachment 7b:
Stability Plots
for

Loss of the Metcalf - Moss Landing 500 kV circuit due to a fault (Level B disturbance)

GENERAL ELECTRIC COMPANY

Voltage Spread
Wed Dec 22 16:41:26 1999

D:\full_loop\sim2.chf
d:\Full_loop\BaseCase.sav



0.7500	O	vbul	35450	LOS ALTS	60.00	1	1.2500
0.7500	+	vbul	35460	LOS GATS	60.00	1	1.2500
0.7500	*	vbul	36000	BIG BASN	60.00	1	1.2500
0.7500	#	vbul	36004	LONE STR	60.00	1	1.2500
0.7500	X	vbul	36006	PT MRTTI	60.00	1	1.2500
0.7500	69	vbul	36007	CRUSHER	60.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by the loss of the METCALF-MOSS LANDING 500 kV circuit.

GENERAL ELECTRIC COMPANY

Frequency Spread
Wed Dec 22 16:42:14 1999

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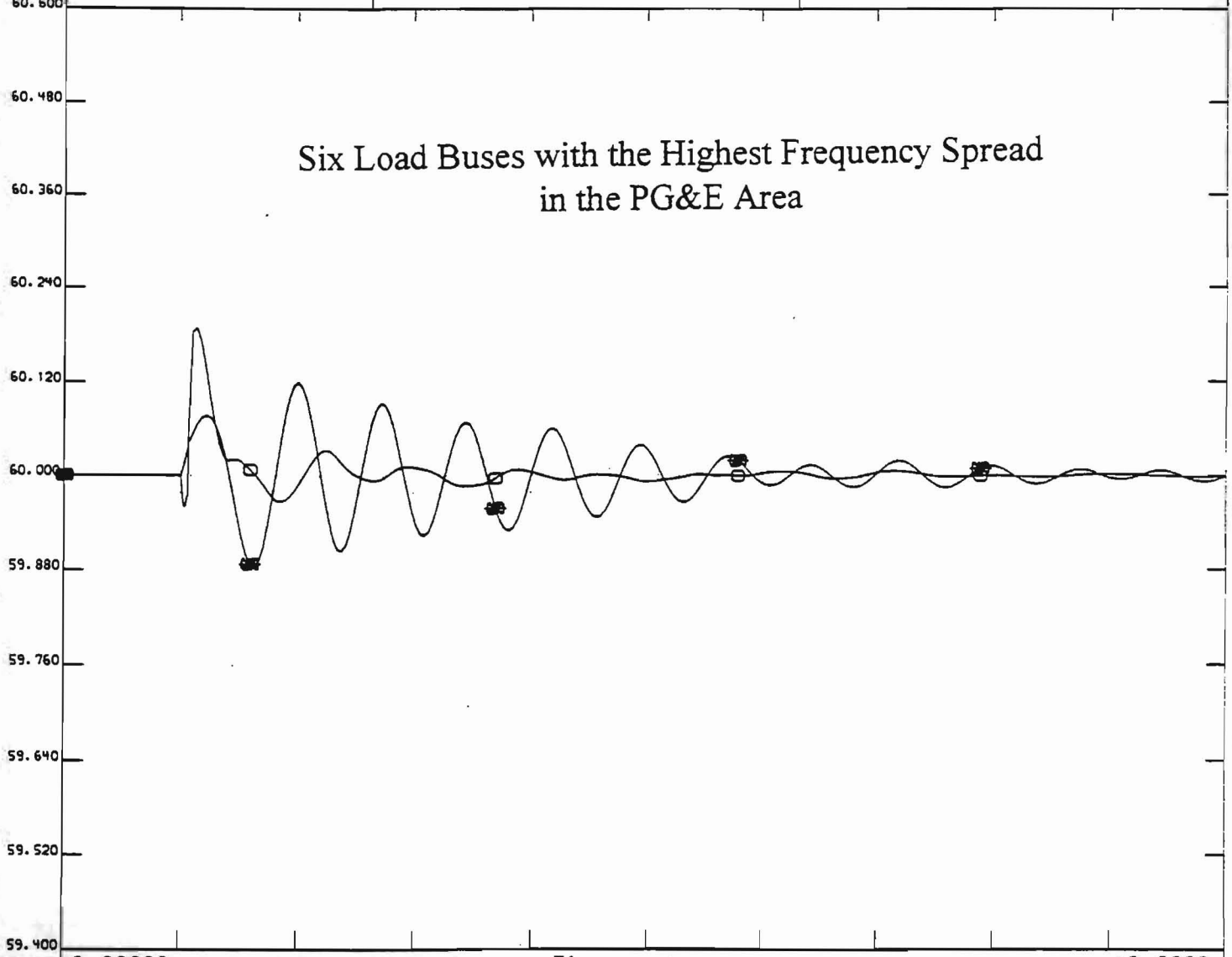
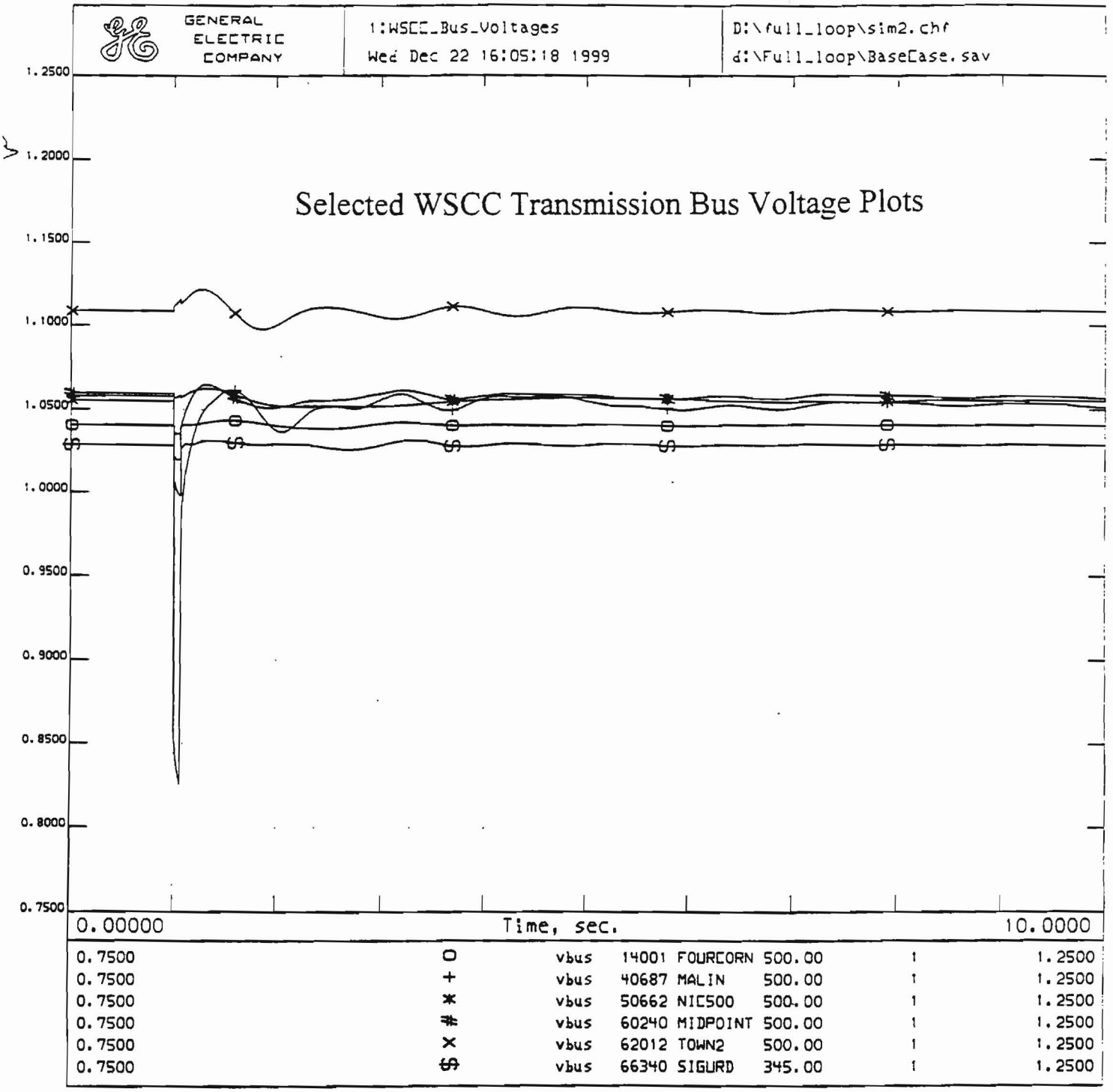
d:\Full_loop\BaseCase.sav

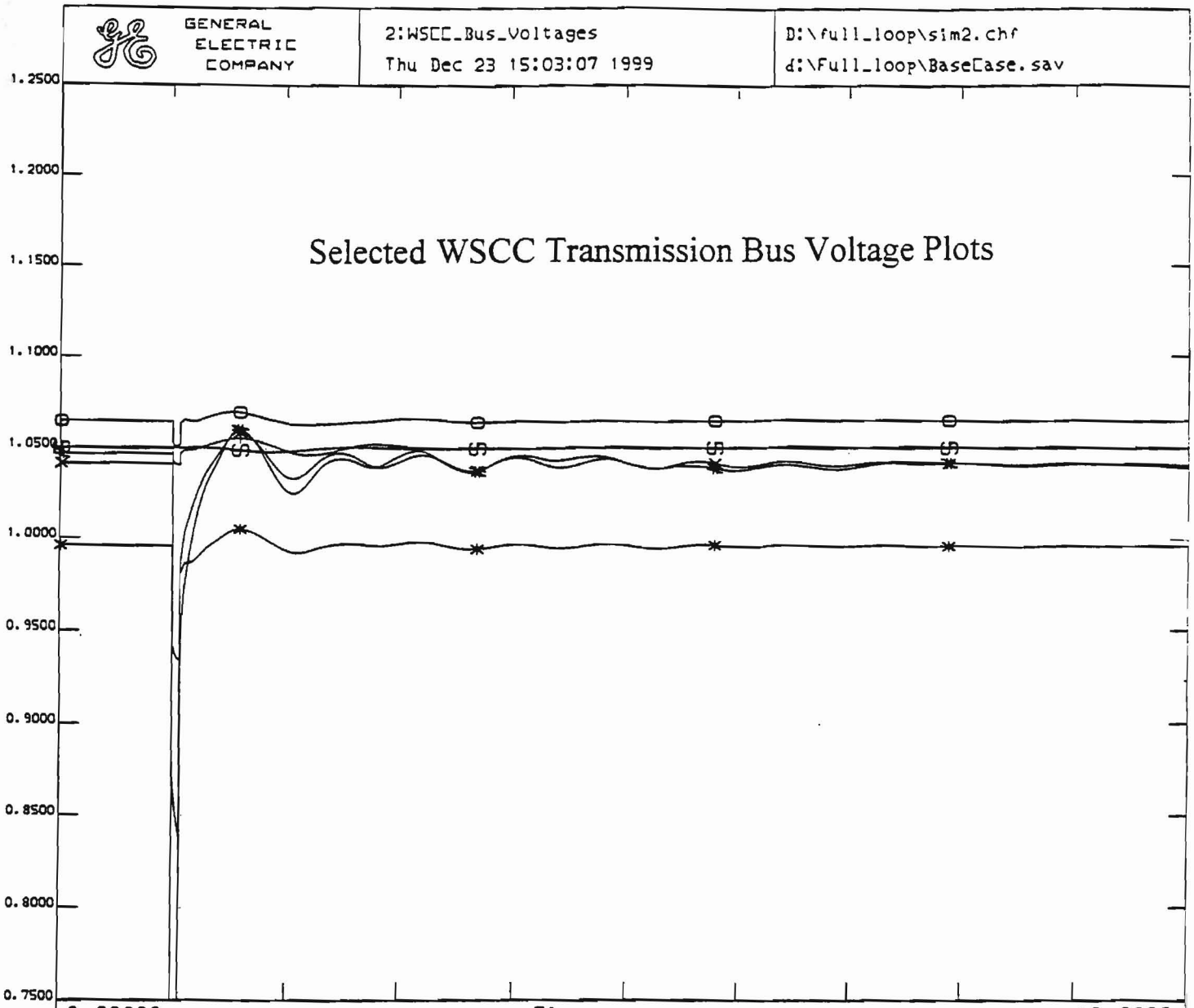


59.400	o	fbul	36004	LONE STR	60.00	1	60.600
59.400	+	fbul	36900	RICHMOND	60.00	1	60.600
59.400	*	fbul	36902	MEADOWVW	60.00	1	60.600
59.400	#	fbul	36904	MILLWOOD	60.00	1	60.600
59.400	x	fbul	36908	JELD-WEN	60.00	1	60.600
59.400	$	fbul	36930	CHESTNUT	14.40	1	60.600

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.



2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by the loss of the METCALF-MOSS LANDING 500 kV circuit.



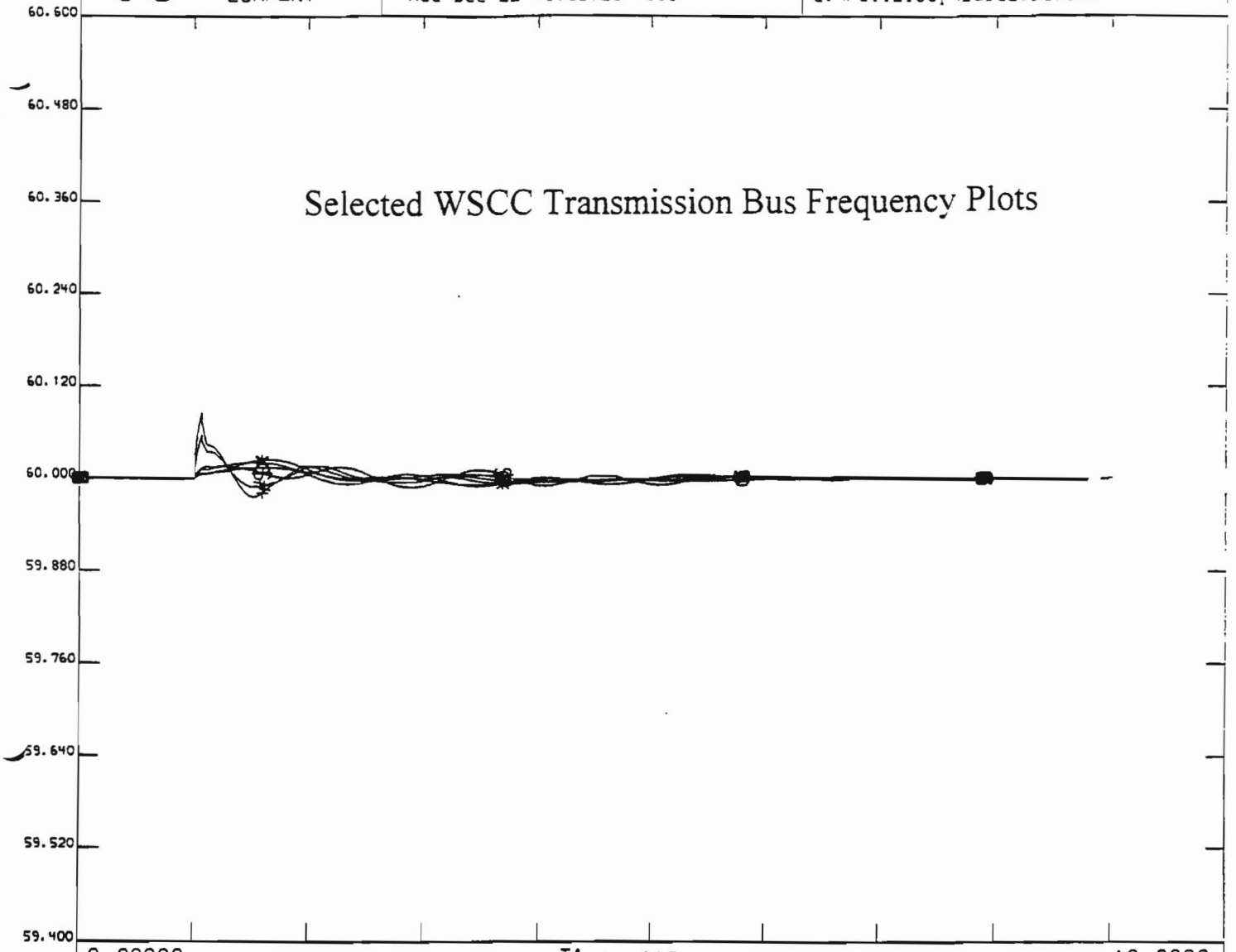
0.7500	O	vbus	14003	NAVAJO	500.00	1	1.2500
0.7500	+	vbus	22090	IMPRLVLY	500.00	1	1.2500
0.7500	*	vbus	24153	MIRALOMA	500.00	1	1.2500
0.7500	#	vbus	30015	TABLE MT	500.00	1	1.2500
0.7500	X	vbus	30060	MIDWAY	500.00	1	1.2500
0.7500	$	vbus	54150	LANGDON	500.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.

GENERAL ELECTRIC COMPANY

3:WSCC_Bus_Frequency
Wed Dec 22 16:05:20 1999

D:\full_loop\sim2.chf
d:\Full_loop\BaseCase.sav



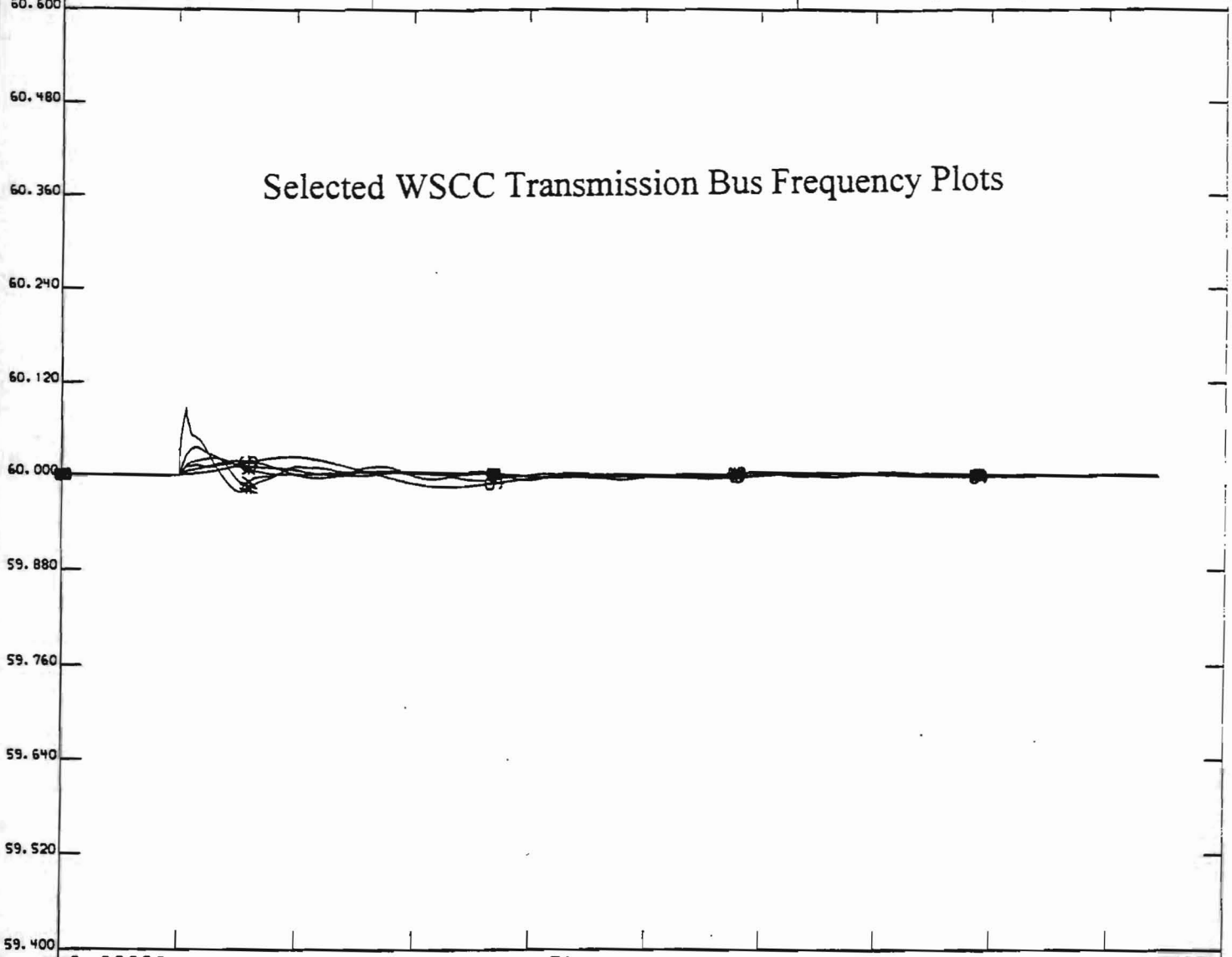
59.400	O	fbus	14001	FOURCORN	500.00	1	60.600
59.400	+	fbus	40687	MALIN	500.00	1	60.600
59.400	*	fbus	50662	NIC500	500.00	1	60.600
59.400	#	fbus	60240	MIDPOINT	500.00	1	60.600
59.400	X	fbus	62012	TOWN2	500.00	1	60.600
59.400	$	fbus	66340	SIGURD	345.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.

GENERAL ELECTRIC COMPANY

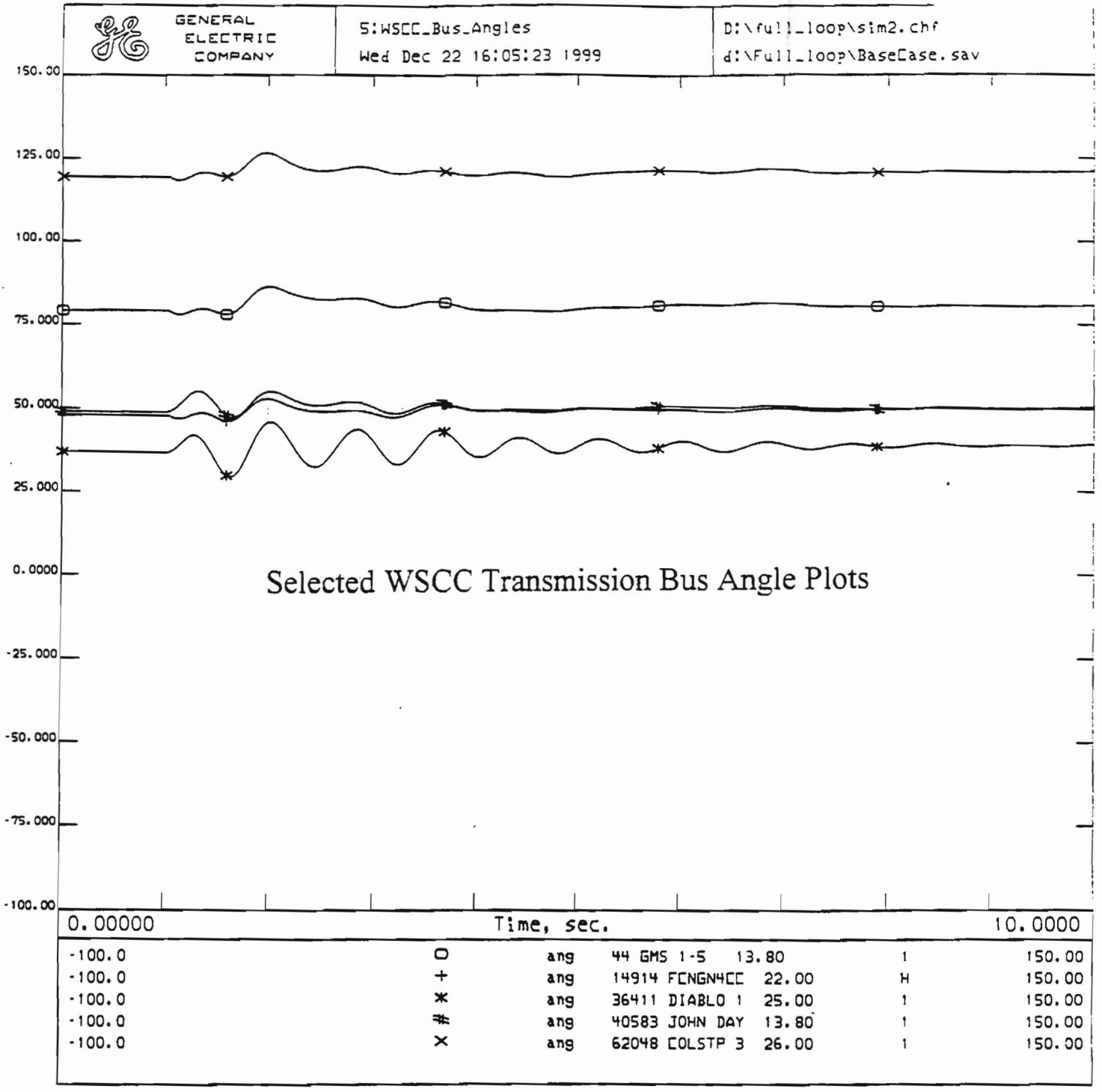
4:WSCC_Bus_Frequency
Wed Dec 22 16:05:21 1999

D:\full_loop\sim2.chf
d:\Full_loop\BaseCase.sav

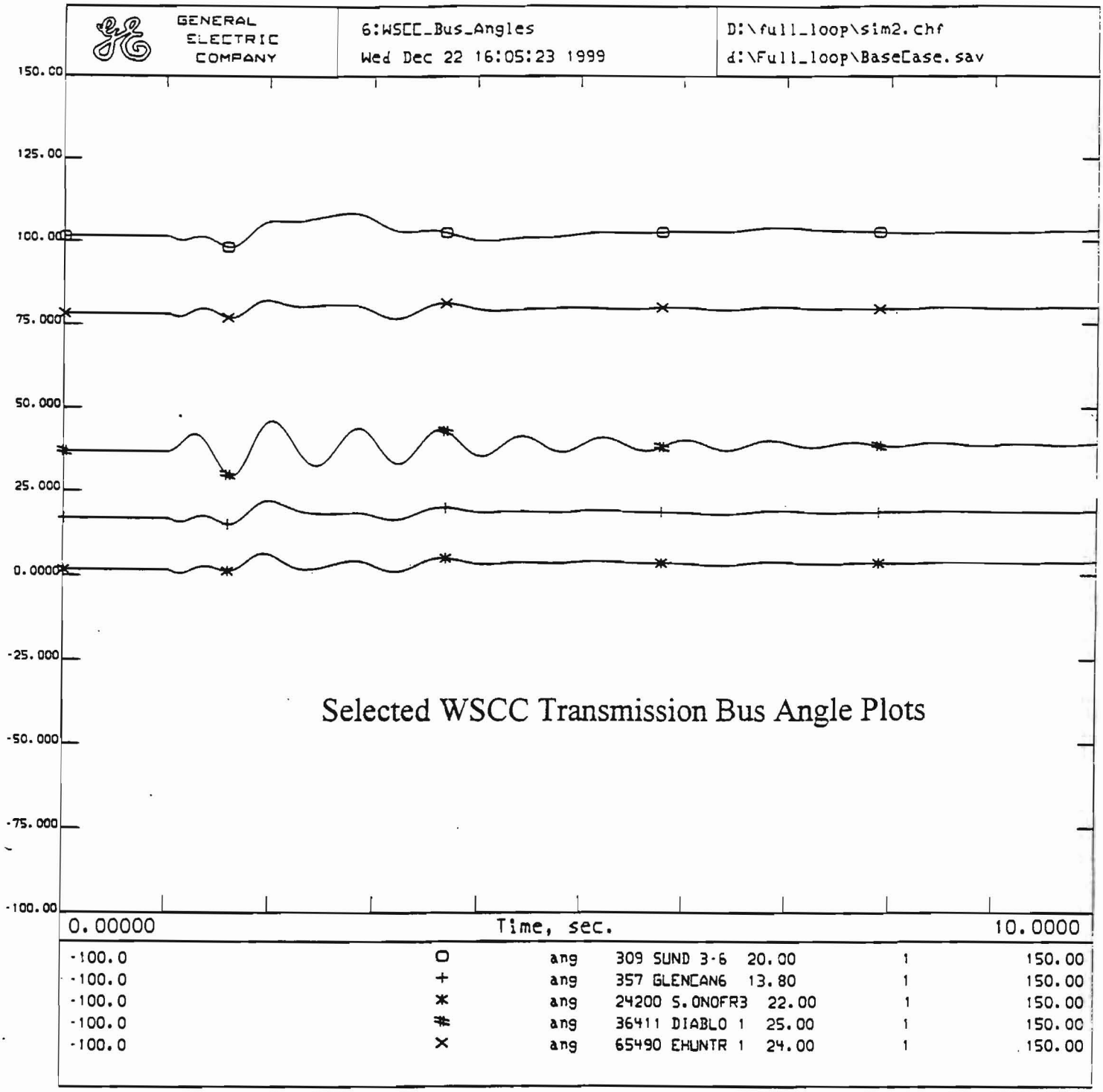


59.400	o	fbus	14003	NAVAJO	500.00	1	60.600
59.400 -	+	fbus	22090	IMPRLVLY	500.00	1	60.600
59.400	*	fbus	24153	MIRALOMA	500.00	1	60.600
59.400	#	fbus	30015	TABLE MT	500.00	1	60.600
59.400	x	fbus	30060	MIDWAY	500.00	1	60.600
59.400	⊗	fbus	54150	LANGDON	500.00	1	60.600

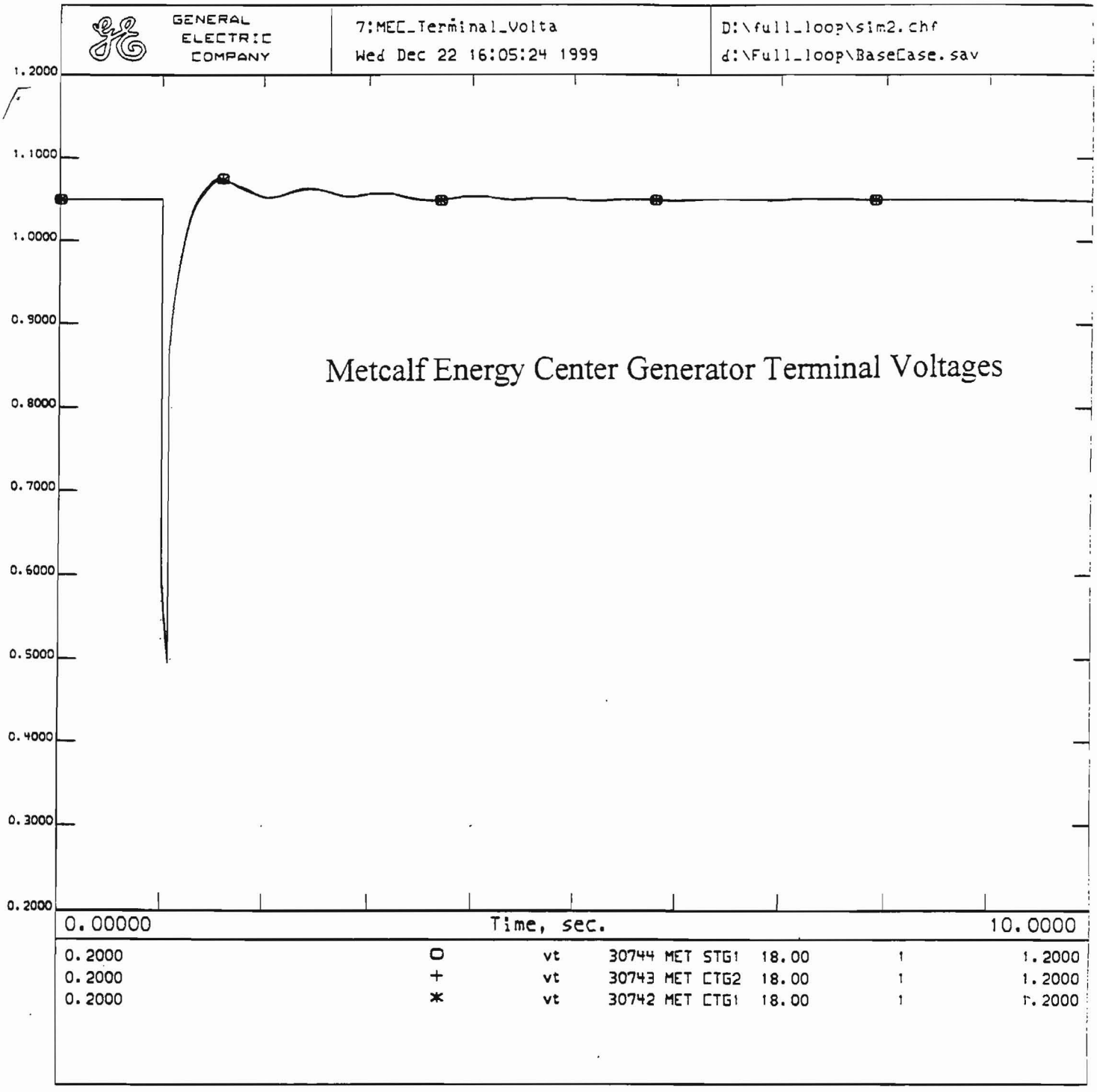
2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.



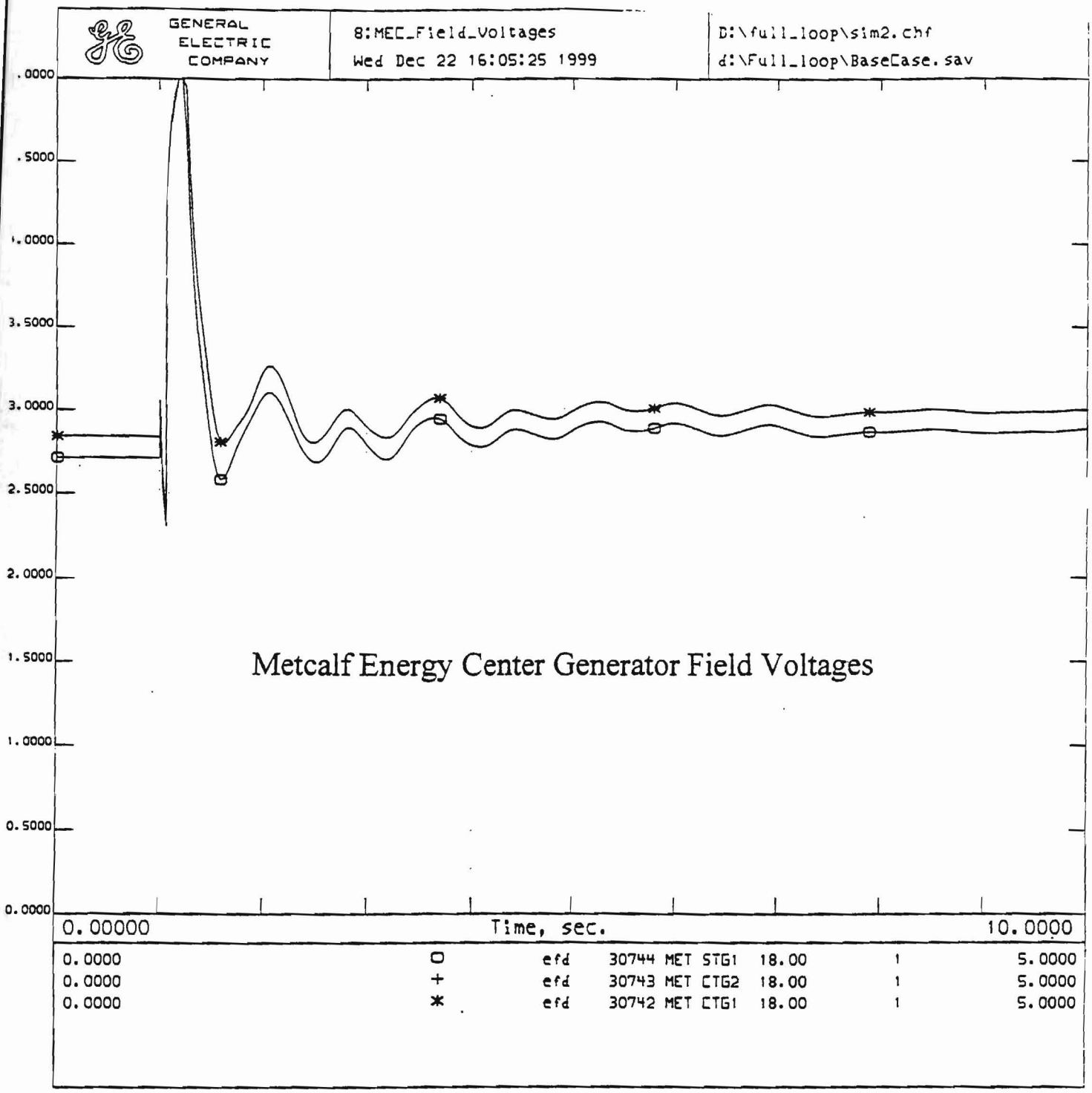
2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.



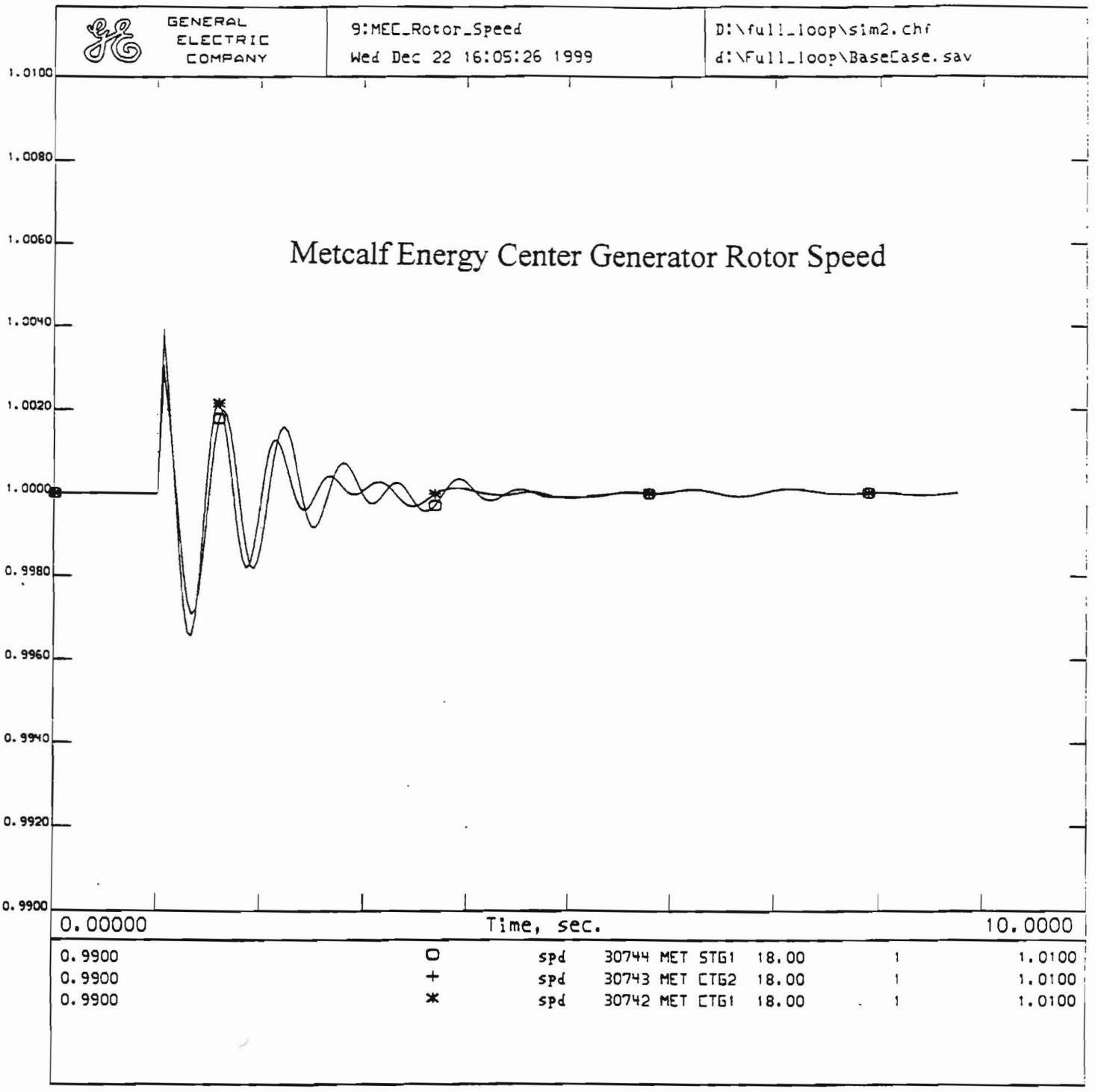
2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by the loss of the METCALF-MOSS LANDING 500 kV circuit.



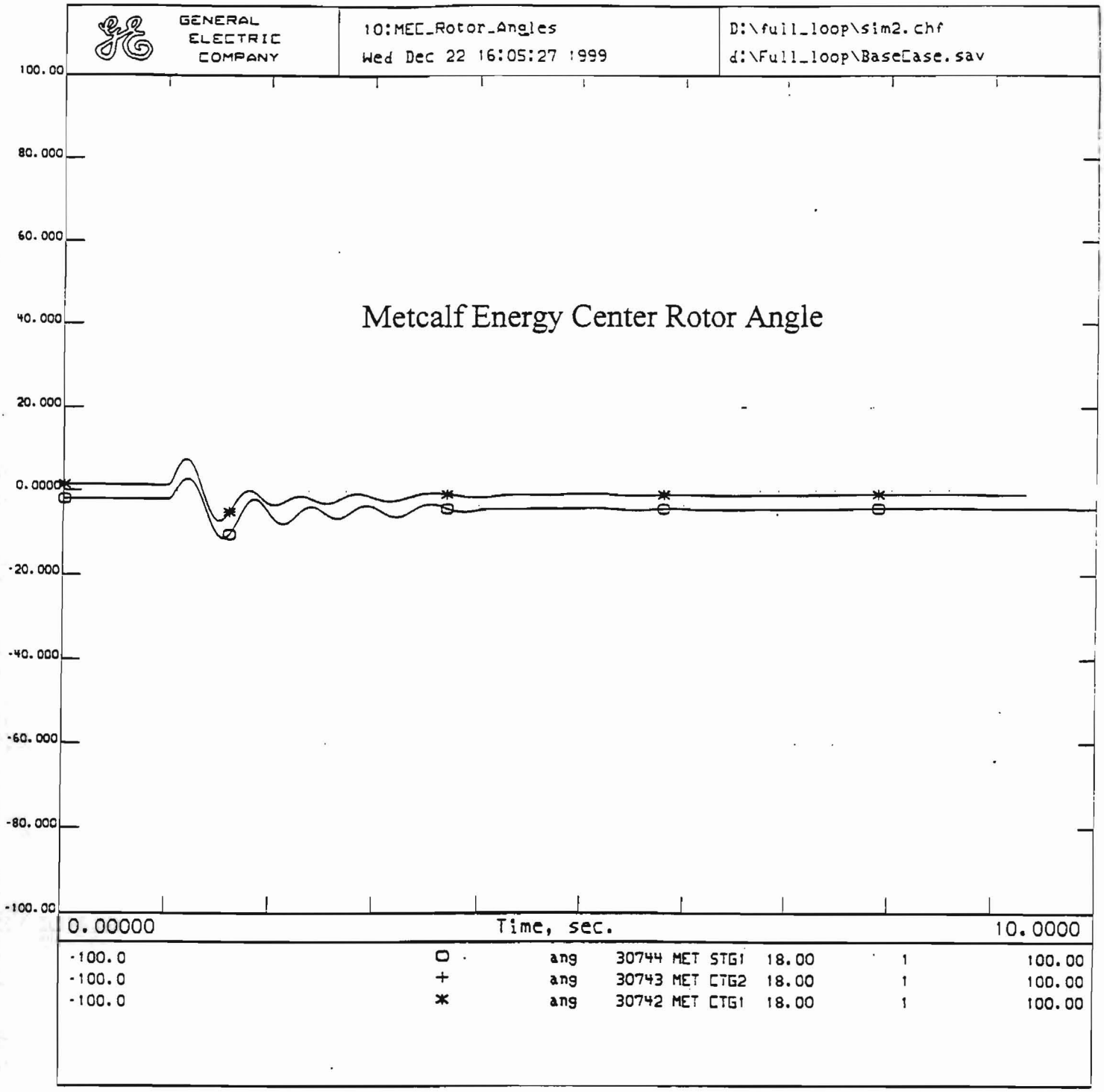
2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.



2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.

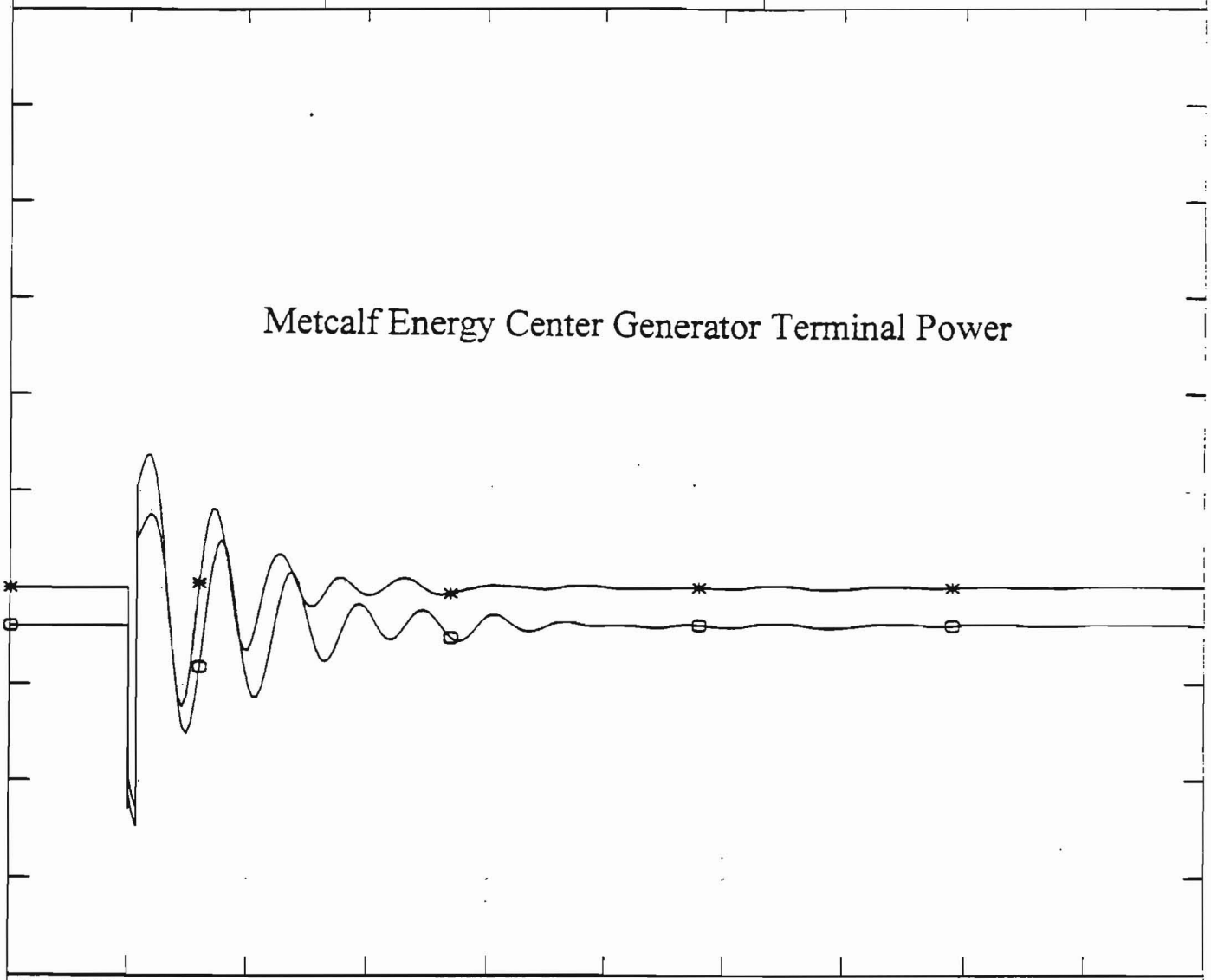


2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.



2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.

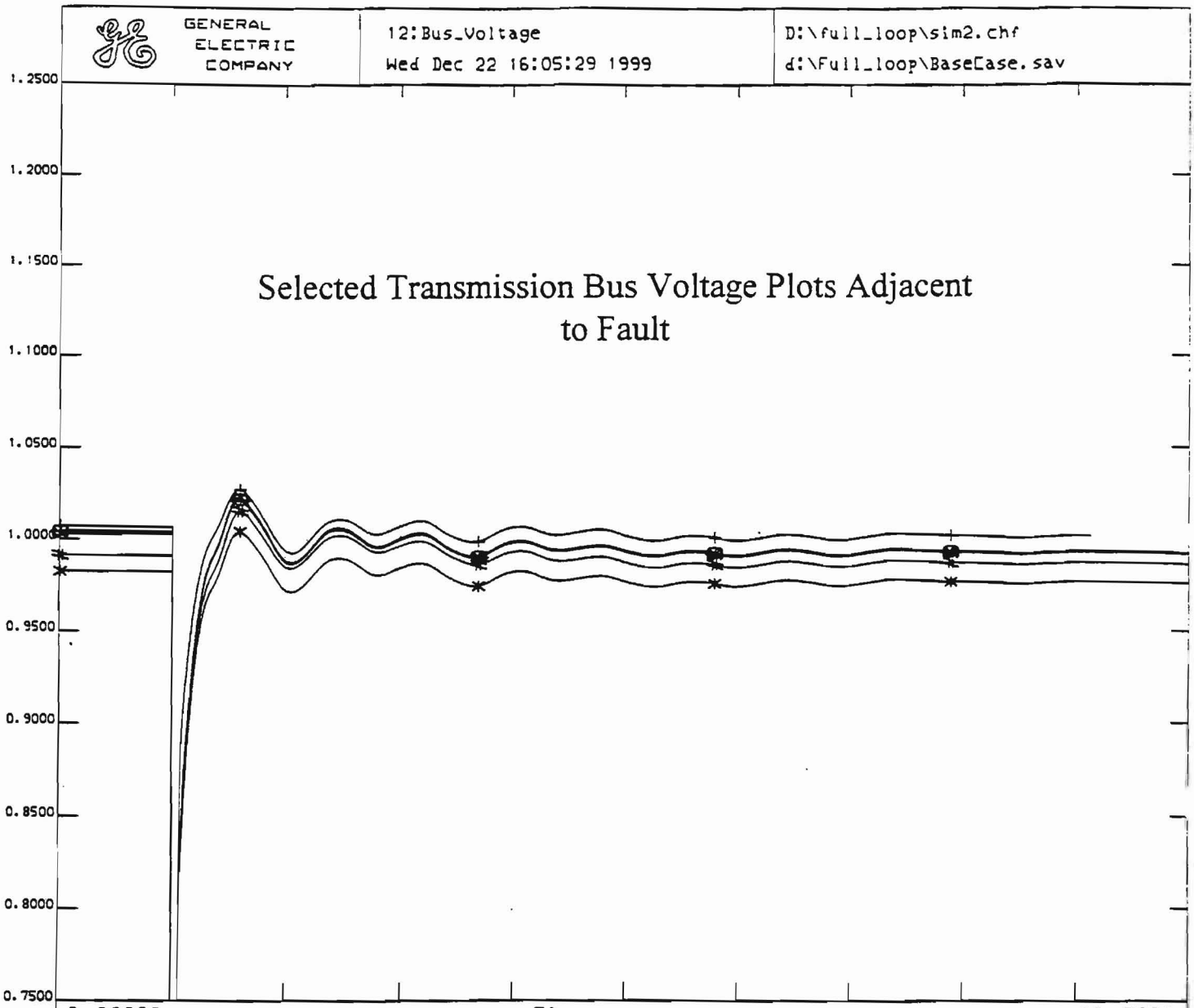
GENERAL ELECTRIC COMPANY	11:MEC_Terminal_Powe Wed Dec 22 16:05:28 1999	D:\full_loop\sim2.chf d:\full_loop\BaseCase.sav



0.00000 Time, sec. 10.0000

0.0000	o	PG	30744 MET STG1	18.00	1	554.00
0.0000	+	PG	30743 MET CTG2	18.00	1	500.00
0.0000	*	PG	30742 MET CTG1	18.00	1	500.00

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.



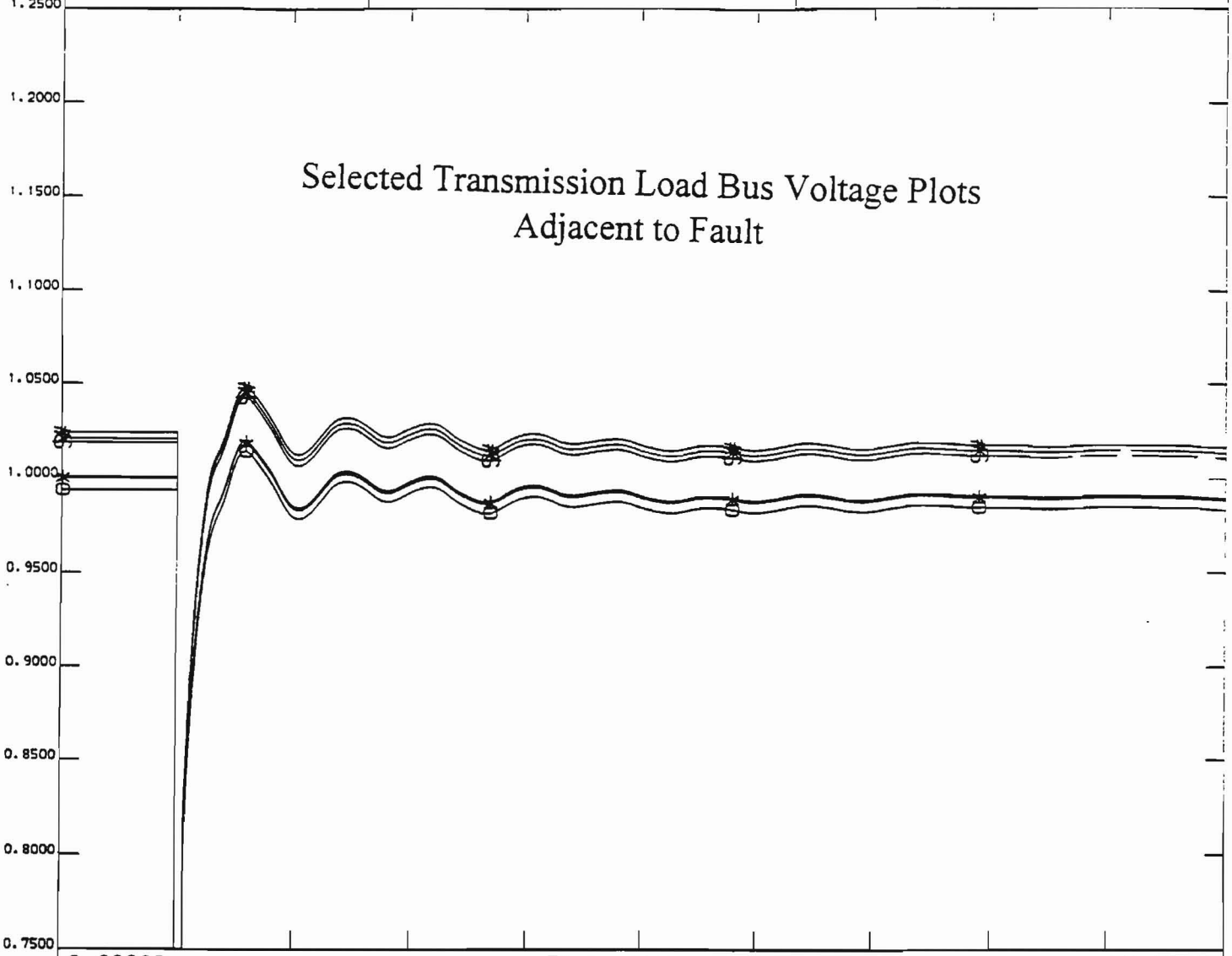
0.7500	O	vbus	30741 CAL METC 230.00	1	1.2500
0.7500	+	vbus	30624 TESLA E 230.00	1	1.2500
0.7500	*	vbul	30631 NEWARK E 230.00	1	1.2500
0.7500	#	vbus	30700 SANMATEO 230.00	1	1.2500
0.7500	×	vbus	30705 MONTAVIS 230.00	1	1.2500
0.7500	$	vbus	30735 METCALF 230.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.

GENERAL ELECTRIC COMPANY

13:Load_Bus_Voltages
Wed Dec 22 16:05:30 1999

D:\full_loop\sim2.chf
d:\Full_loop\BaseCase.sav



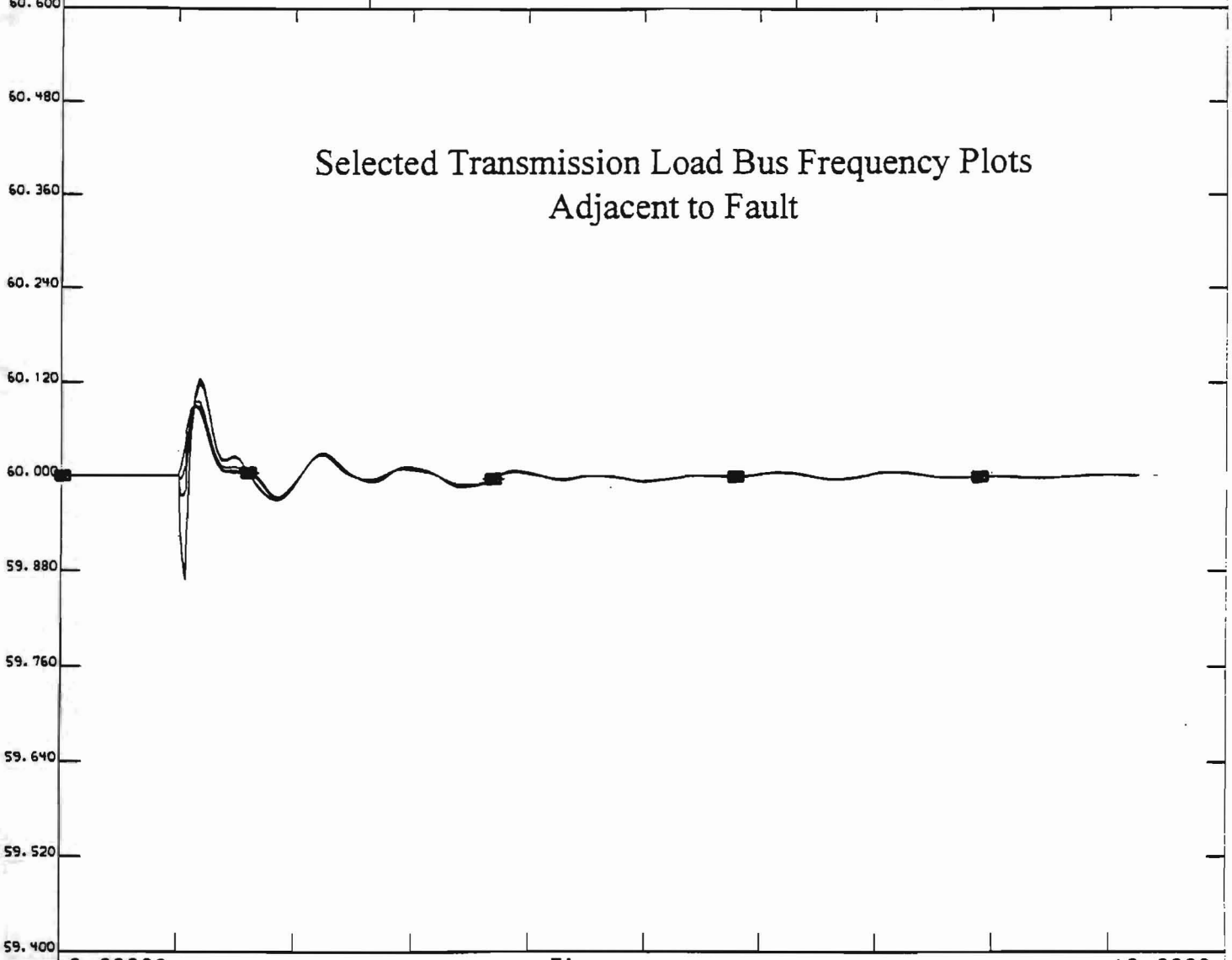
0.7500	o	vbul	30711 S.L.A.C. 230.00	1	1.2500
0.7500	+	vbul	30720 SARATOGA 230.00	1	1.2500
0.7500	*	vbul	30730 HICKS 230.00	1	1.2500
0.7500	#	vbul	35353 MT VIEW 115.00	1	1.2500
0.7500	×	vbul	35362 LOCKHD 2 115.00	1	1.2500
0.7500	$	vbul	35368 BRITTONP 115.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.

GENERAL ELECTRIC COMPANY

14:Load_Frequency
Wed Dec 22 16:05:31 1999

D:\full_loop\sim2.chf
d:\Full_loop\BaseCase.sav



59.400	o	fbul	30711 S.L.A.C. 230.00	1	60.600
59.400	+	fbul	30720 SARATOGA 230.00	1	60.600
59.400	*	fbul	30730 HICKS 230.00	1	60.600
59.400	#	fbul	35353 MT VIEW 115.00	1	60.600
59.400	x	fbul	35362 LOCKHD 2 115.00	1	60.600
59.400	$	fbul	35368 BRITTONP 115.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(N-1): 3-phase fault at Metcalf 500 kV bus followed by
the loss of the METCALF-MOSS LANDING 500 kV circuit.

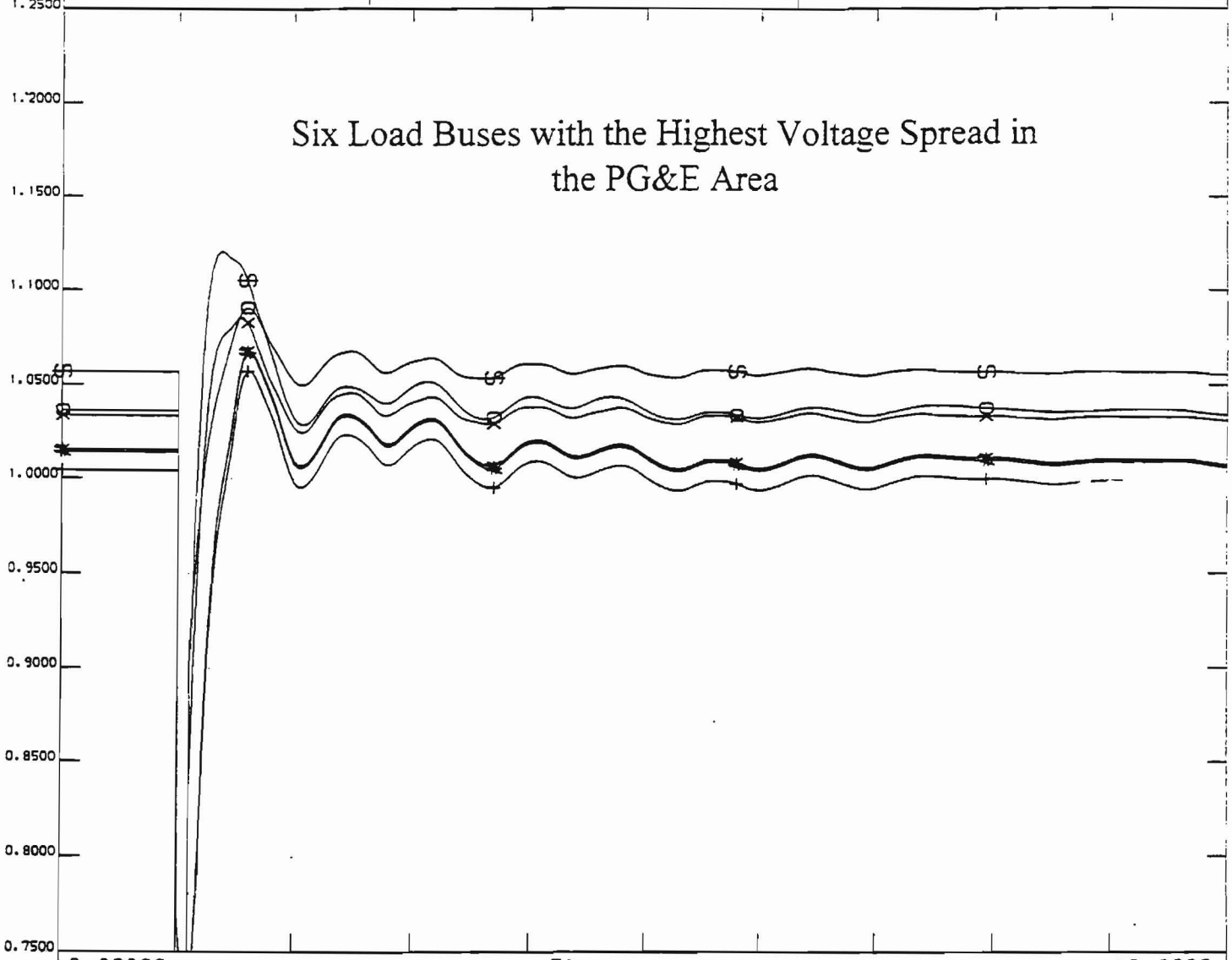
Attachment 7c:
Stability Plots
for

Loss of the Metcalf 500/230 kV transformer bank #12 due to a fault (Level B disturbance)

GENERAL ELECTRIC COMPANY

Voltage Spread
Wed Dec 22 16:45:56 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav



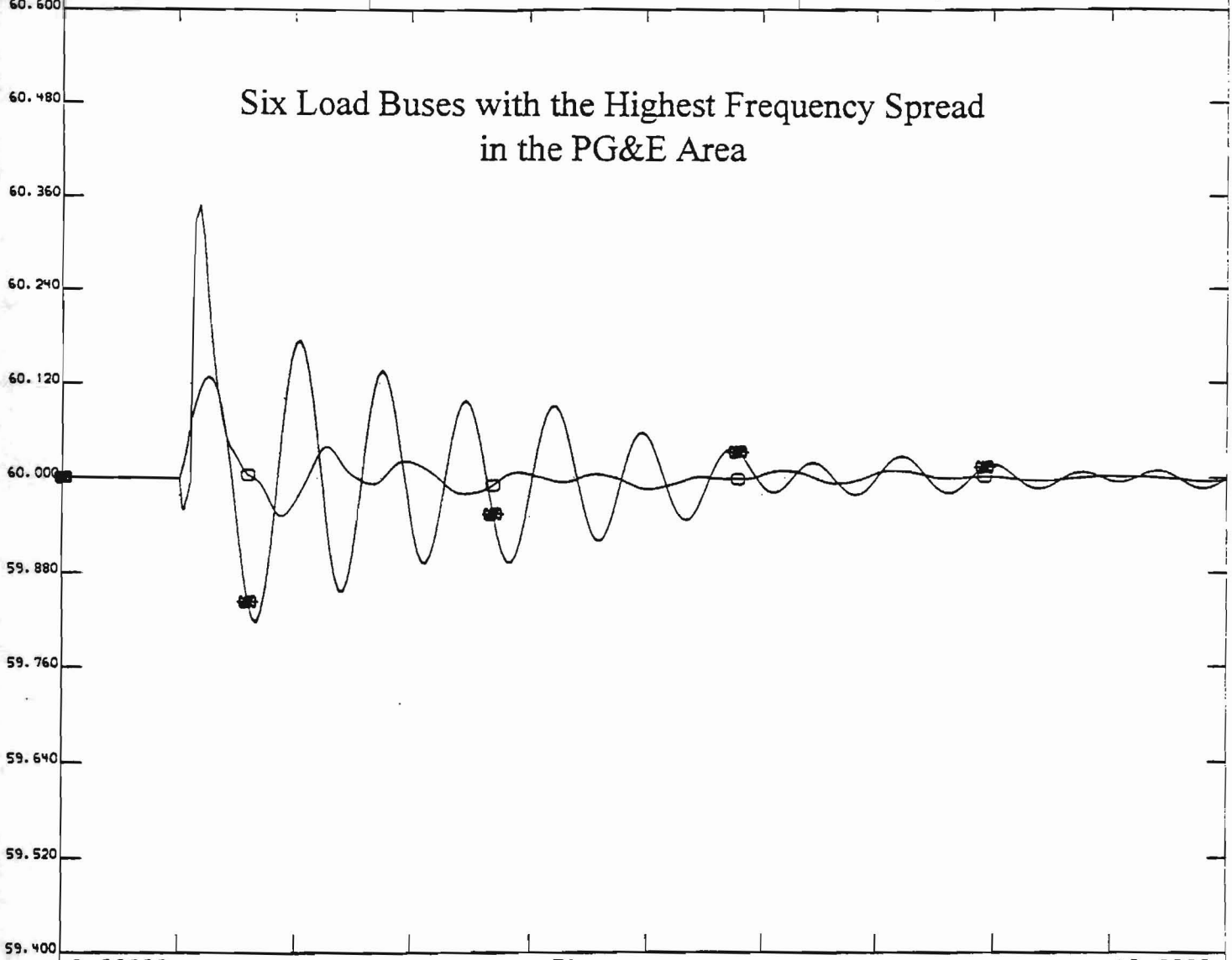
0.7500	○	vbul	31726	ELKCREEK	60.00	1	1.2500
0.7500	+	vbul	36004	LONE STR	60.00	1	1.2500
0.7500	*	vbul	36006	PT MRTTI	60.00	1	1.2500
0.7500	#	vbul	36007	CRUSHER	60.00	1	1.2500
0.7500	×	vbul	38470	HUGHSON	69.00	1	1.2500
0.7500	⊗	vbul	38566	LA GRNLD	69.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

Frequency Spread
Wed Dec 22 16:46:32 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav



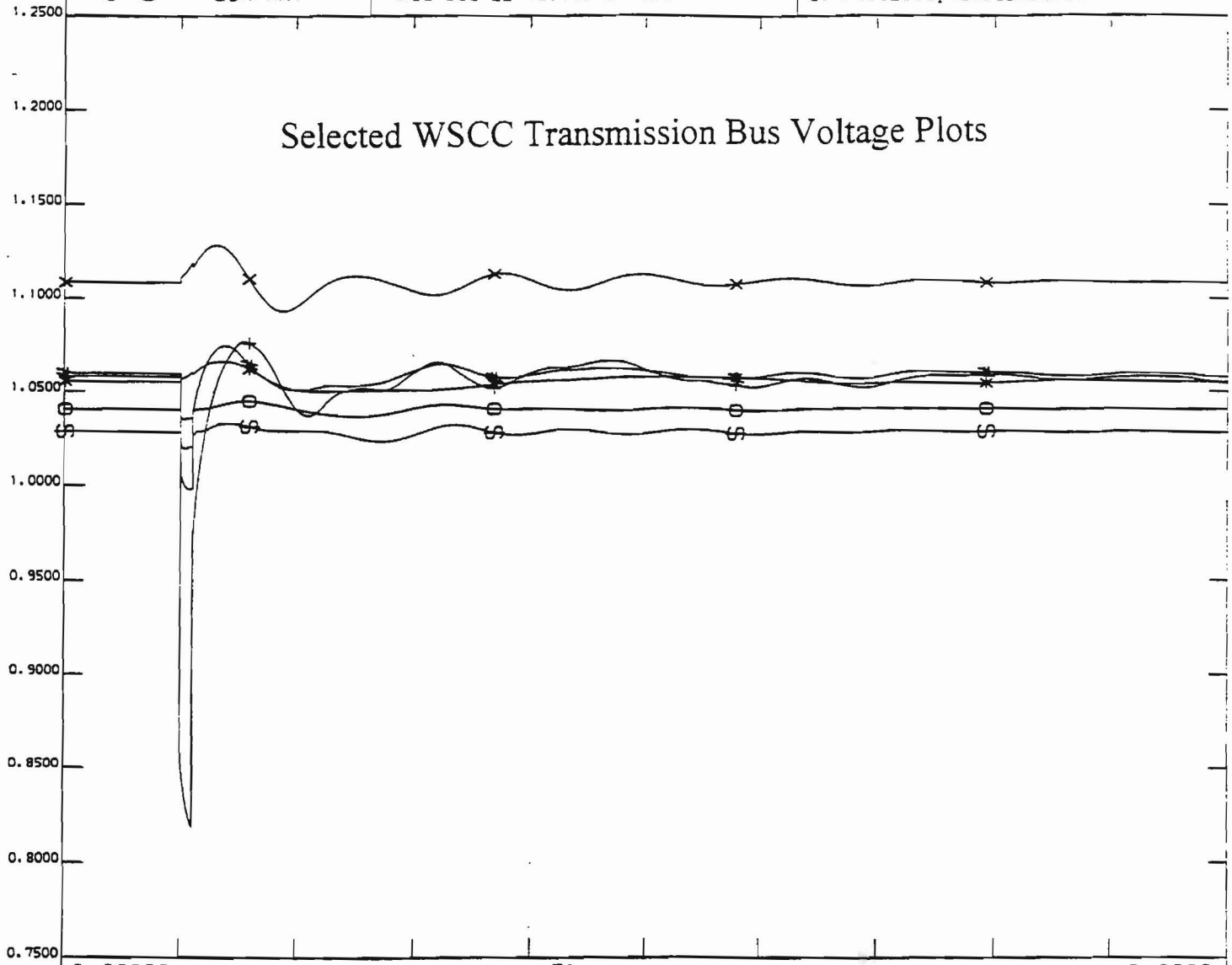
59.400	o	fbul	36004	LONE STR	60.00	1	60.600
59.400	+	fbul	36900	RICHMOND	60.00	1	60.600
59.400	*	fbul	36902	MEADOWVW	60.00	1	60.600
59.400	#	fbul	36904	MILLWOOD	60.00	1	60.600
59.400	x	fbul	36908	JELD-WEN	60.00	1	60.600
59.400	$	fbul	36930	CHESTNUT	14.40	1	60.600

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

1:WSCC_Bus_Voltages
Wed Dec 22 16:17:16 1999

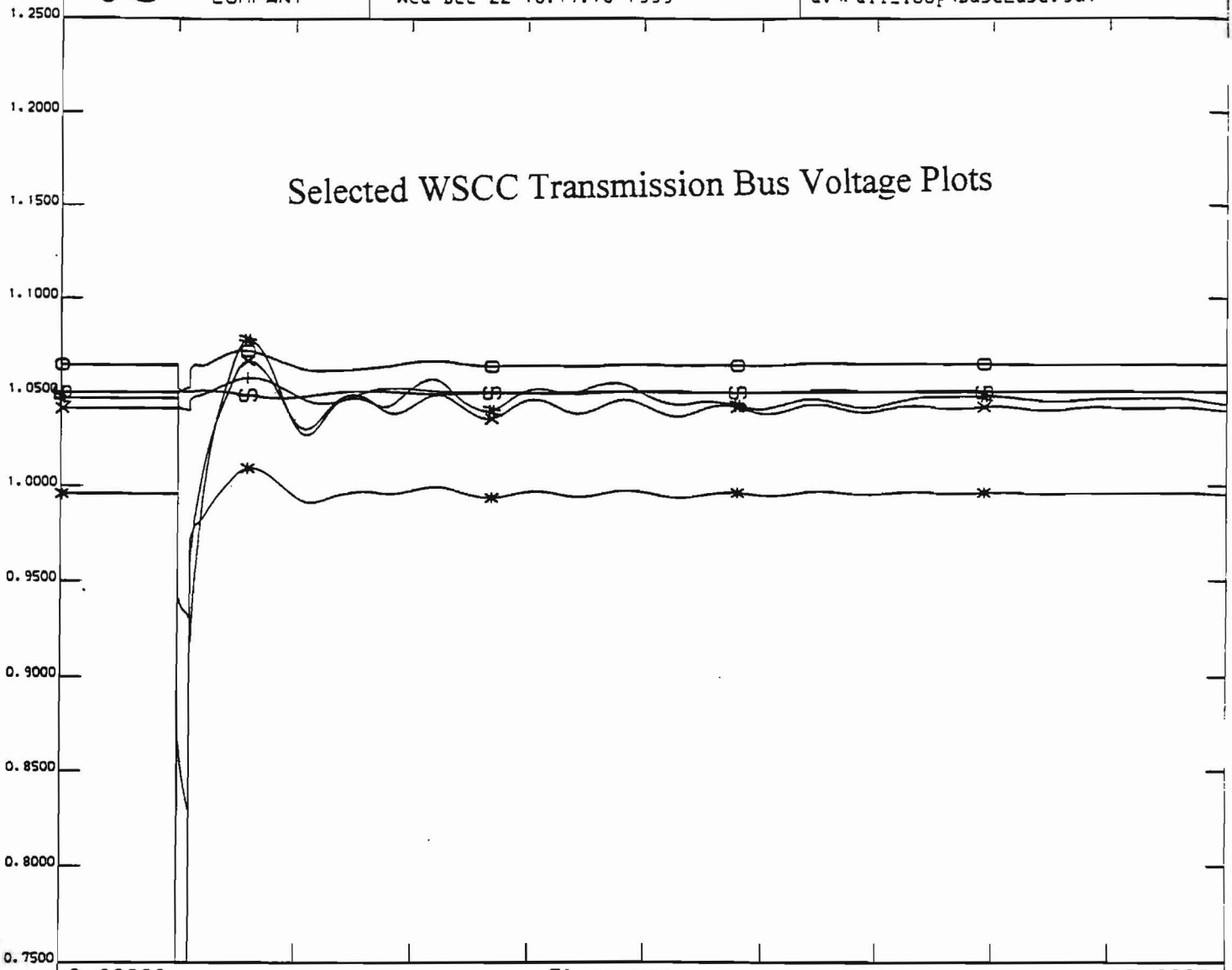
D:\full_loop\sim3.chf
d:\full_loop\BaseCase.sav



0.7500	O	vbus	14001	FOURCORN	500.00	1	1.2500
0.7500	+	vbus	40687	MALIN	500.00	1	1.2500
0.7500	*	vbus	50662	NIC500	500.00	1	1.2500
0.7500	#	vbus	60240	MIDPOINT	500.00	1	1.2500
0.7500	×	vbus	62012	TOWN2	500.00	1	1.2500
0.7500	⊗	vbus	66340	SIGURD	345.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY	2:WSCC_Bus_Voltages Wed Dec 22 16:17:18 1999	D:\full_loop\sim3.chf d:\Full_loop\BaseCase.sav



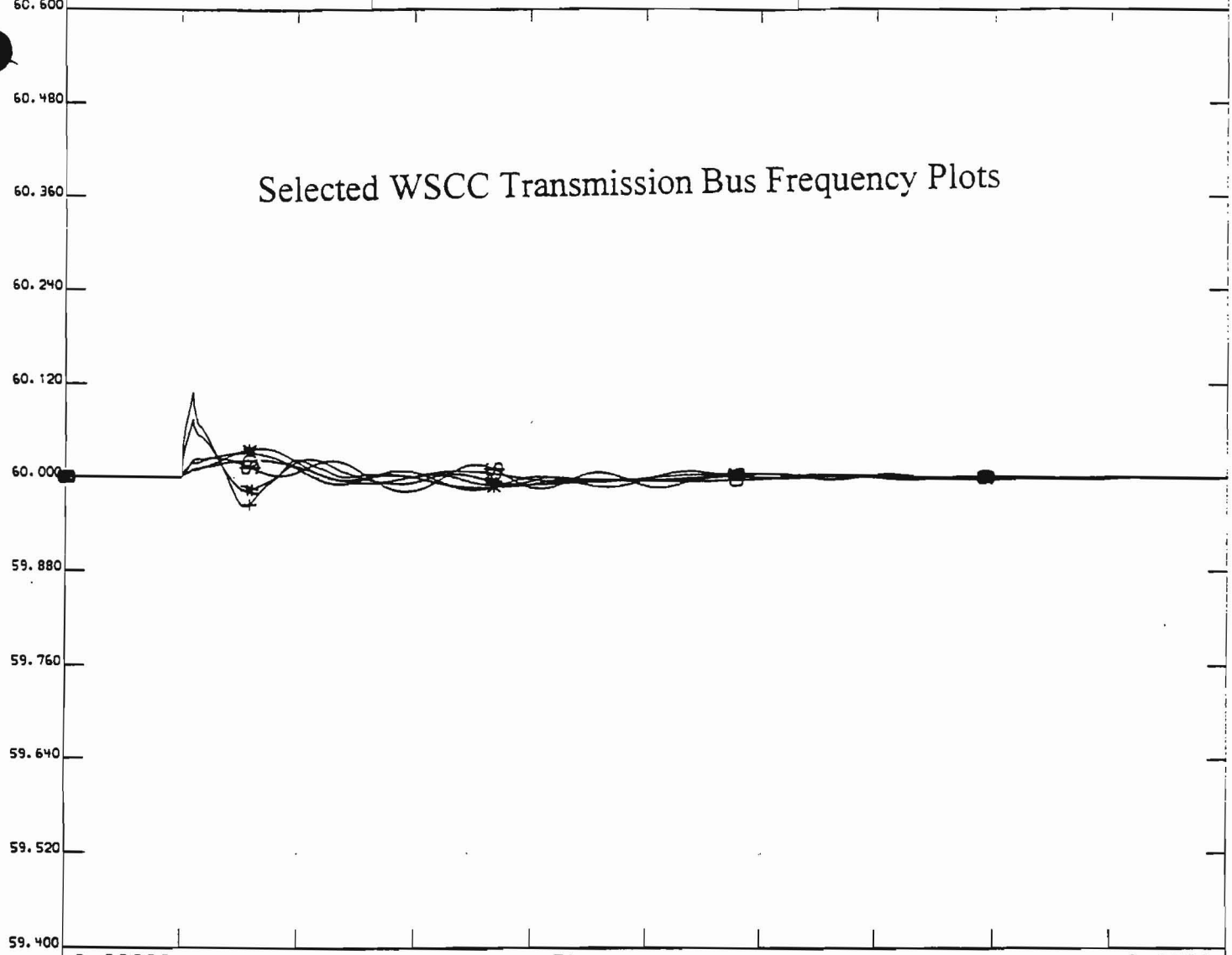
0.7500	O	vbus	14003	NAVAJO	500.00	1	1.2500
0.7500	+	vbus	22090	IMPRLVLY	500.00	1	1.2500
0.7500	*	vbus	24153	MIRALOMA	500.00	1	1.2500
0.7500	#	vbus	30015	TABLE MT	500.00	1	1.2500
0.7500	X	vbus	30060	MIDWAY	500.00	1	1.2500
0.7500	$	vbus	54150	LANGDON	500.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

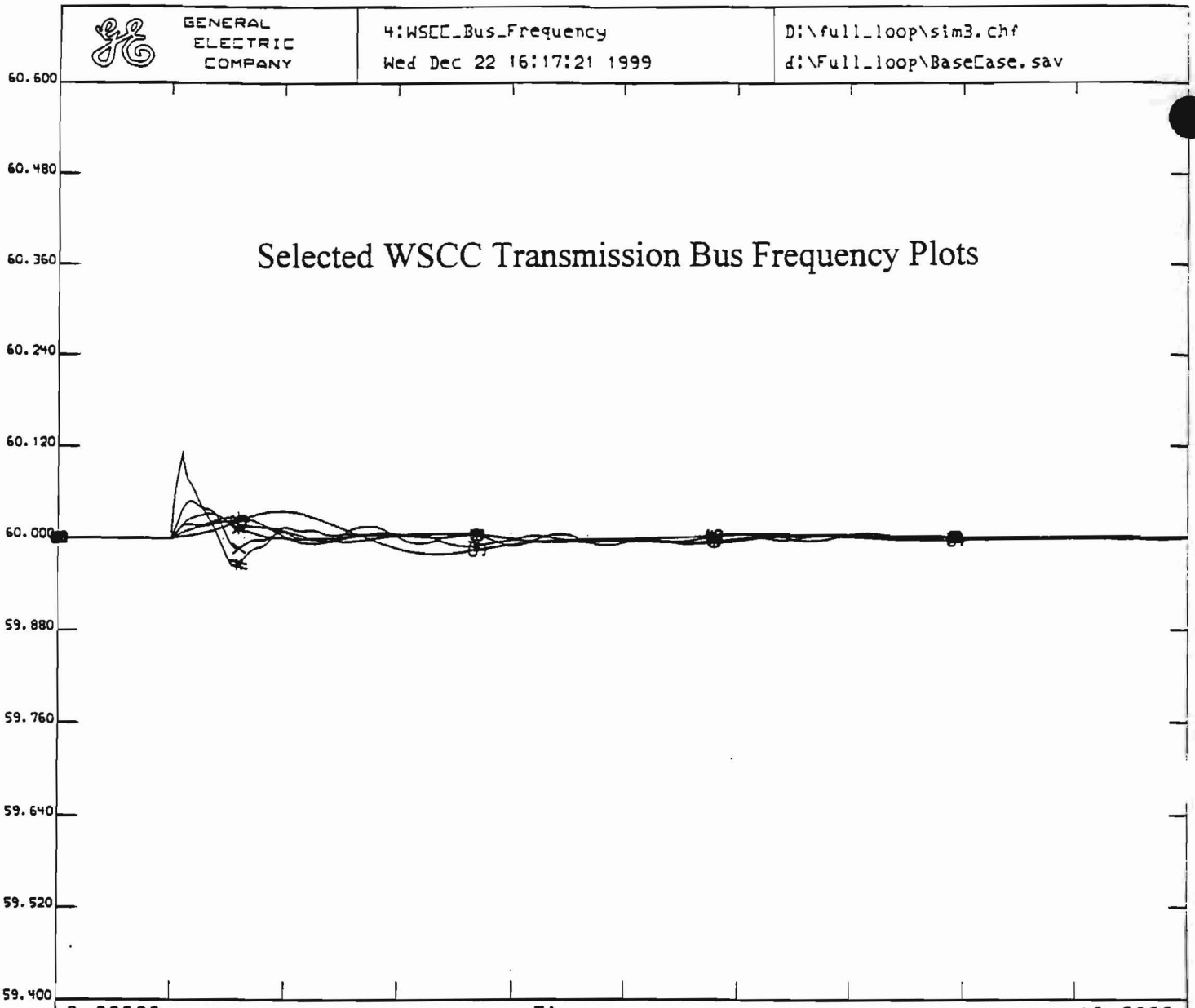
3:WSCC_Bus_Frequency
Wed Dec 22 16:17:20 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav



59.400	o	fbus	14001	FOURCORN	500.00	1	60.600
59.400	+	fbus	40687	MALIN	500.00	1	60.600
59.400	*	fbus	50662	NIC500	500.00	1	60.600
59.400	#	fbus	60240	MIDPOINT	500.00	1	60.600
59.400	x	fbus	62012	TOWN2	500.00	1	60.600
59.400	$	fbus	66340	SIGURD	345.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12



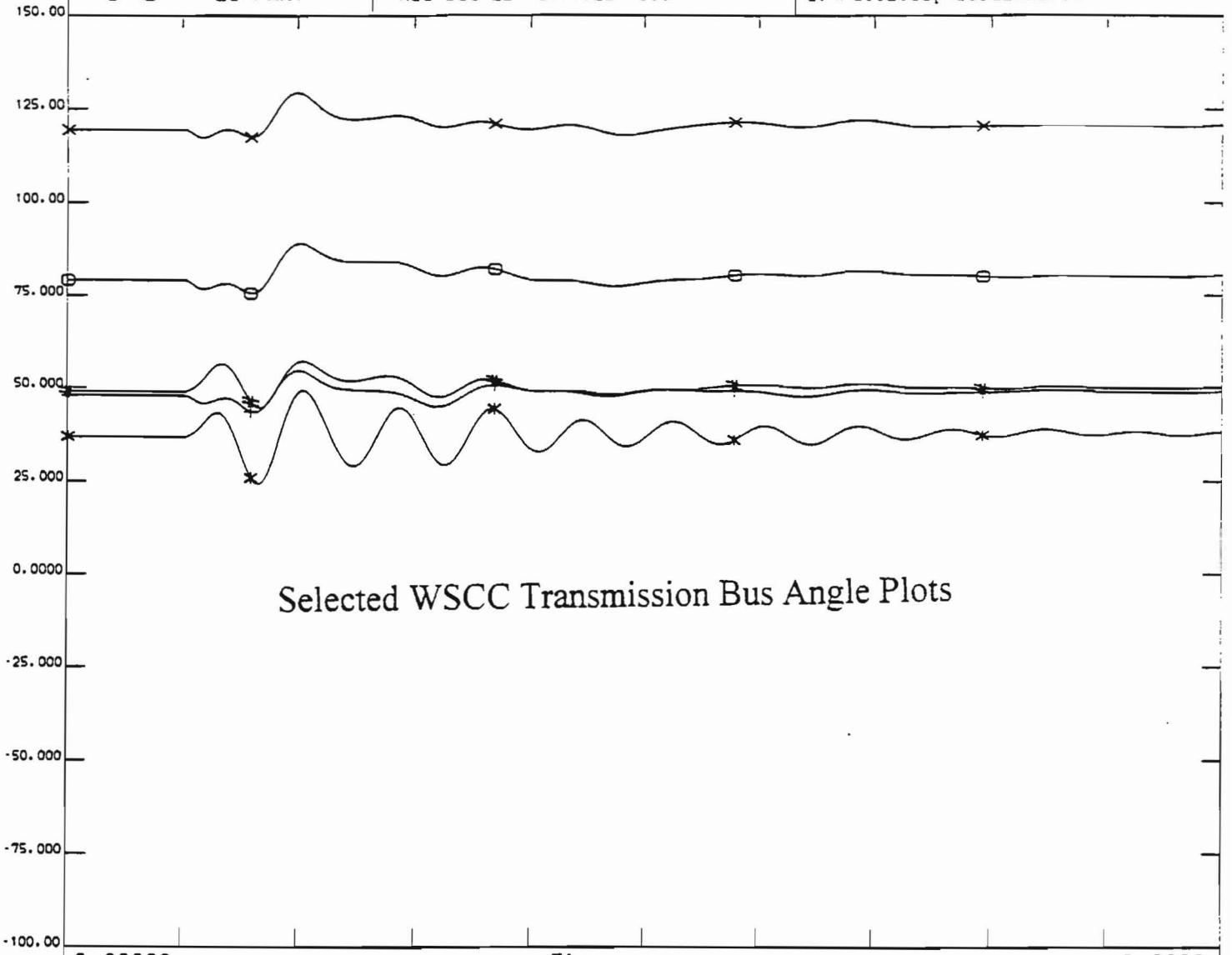
59.400	o	fbus	14003	NAVAJO	500.00	1	60.600
59.400	+	fbus	22090	IMPRLVLY	500.00	1	60.600
59.400	*	fbus	24153	MIRALOMA	500.00	1	60.600
59.400	#	fbus	30015	TABLE MT	500.00	1	60.600
59.400	x	fbus	30060	MIDWAY	500.00	1	60.600
59.400	$	fbus	54150	LANGDON	500.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

5:WSCC_Bus_Angles
Wed Dec 22 16:17:23 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav



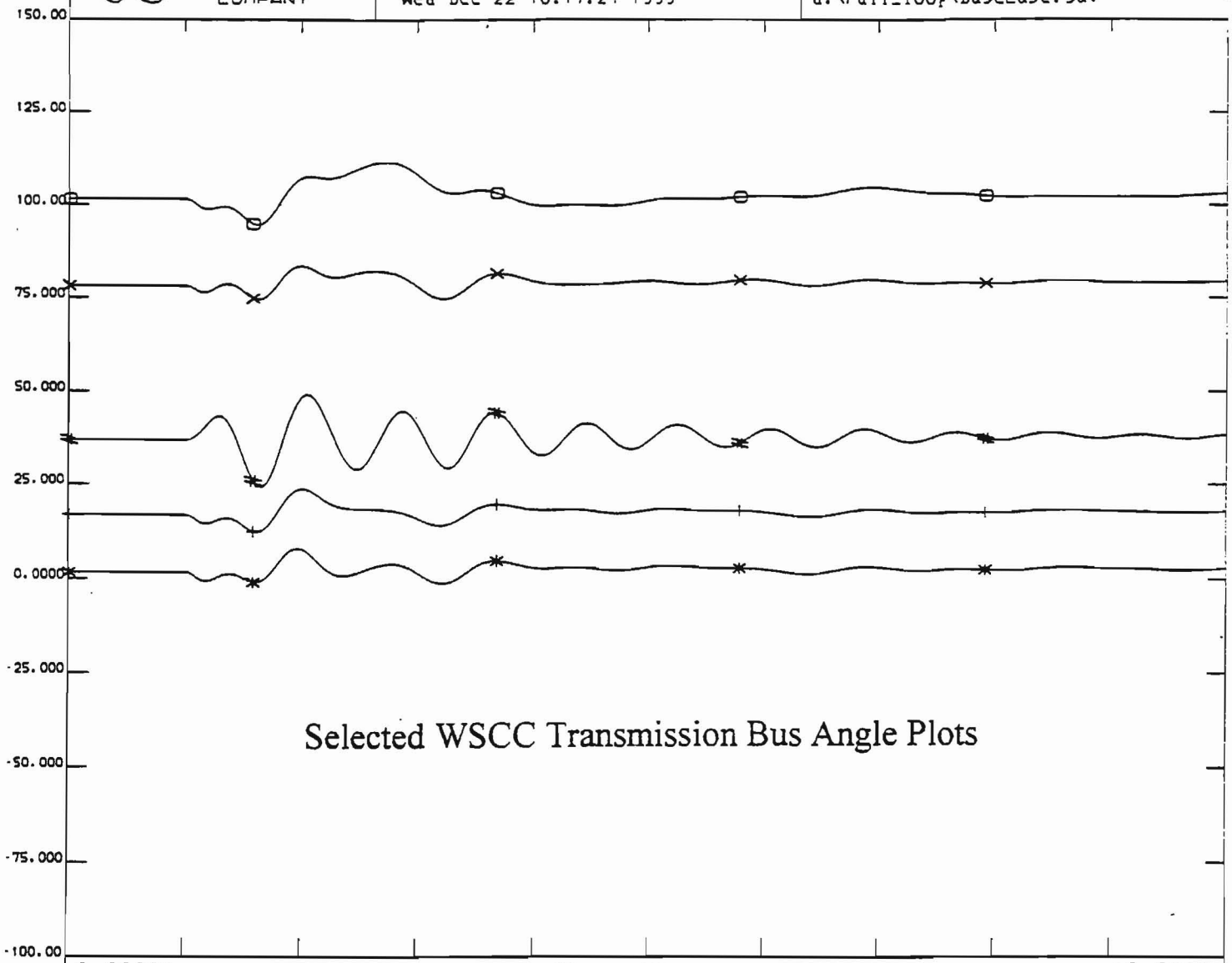
-100.0	o	ang	44 GMS 1-5	13.80	1	150.00
-100.0	+	ang	14914 FCNGN4CC	22.00	H	150.00
-100.0	*	ang	36411 DIABLO 1	25.00	1	150.00
-100.0	#	ang	40583 JOHN DAY	13.80	1	150.00
-100.0	x	ang	62048 COLSTP 3	26.00	1	150.00

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

6:WSCC_Bus_Angles
Wed Dec 22 16:17:24 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav



0.00000 Time, sec. 10.0000

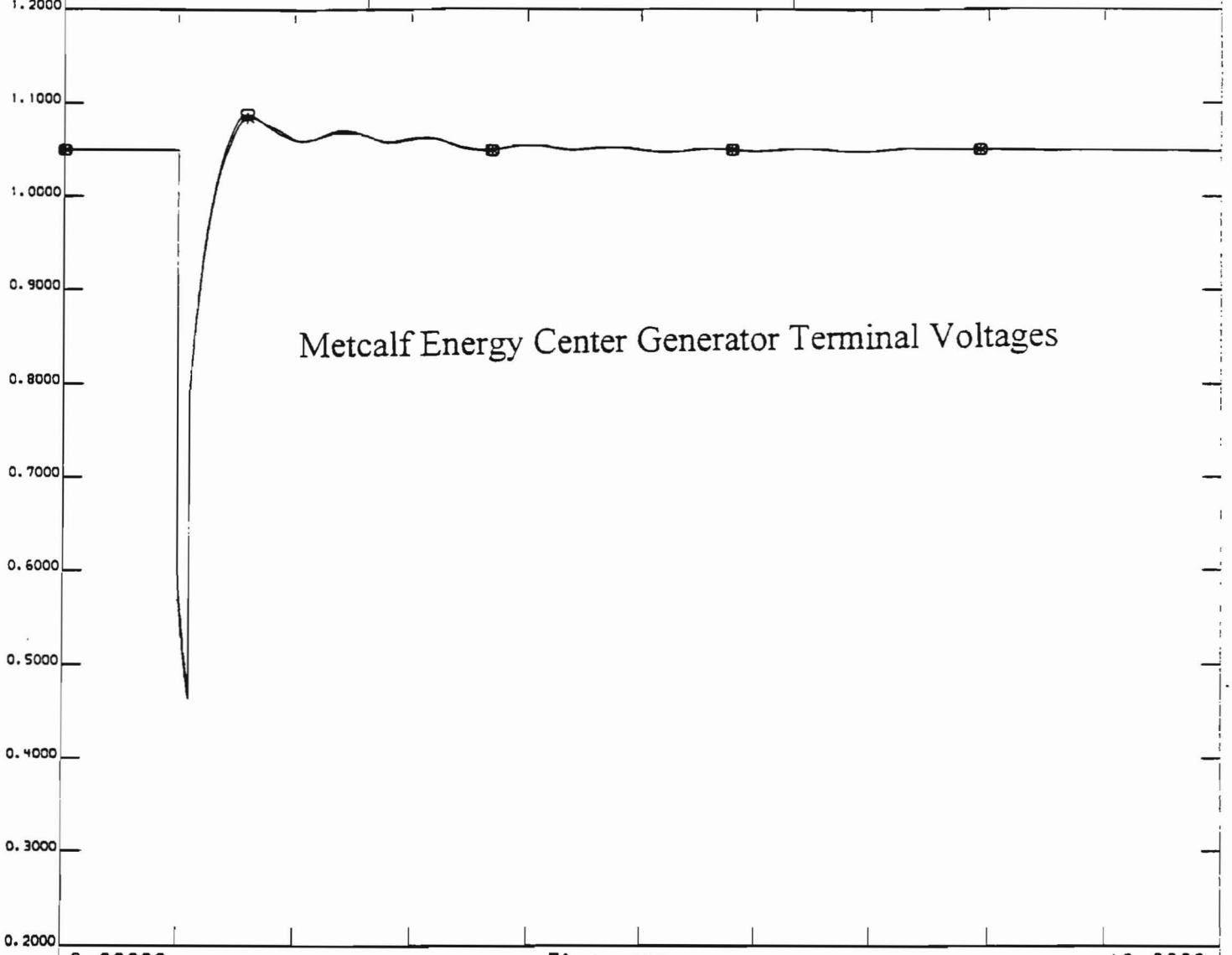
-100.0	o	ang	309 SUND 3-6 20.00	1	150.00
-100.0	+	ang	357 GLENCAN6 13.80	1	150.00
-100.0	*	ang	24200 S.ONOFR3 22.00	1	150.00
-100.0	#	ang	36411 DIABLO 1 25.00	1	150.00
-100.0	x	ang	65490 EHUNTR 1 24.00	1	150.00

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

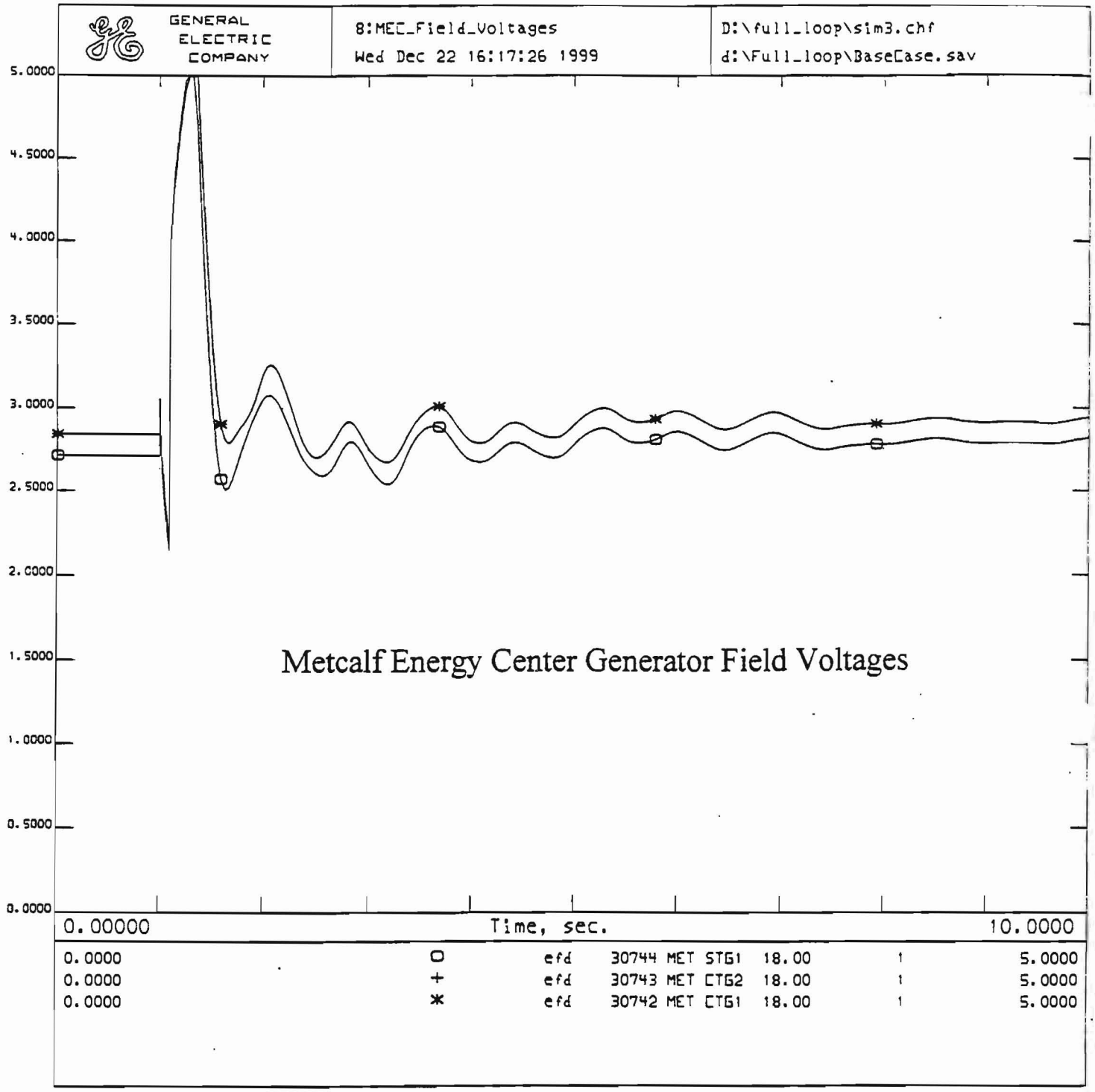
7:MEC_Terminal_Volta
Wed Dec 22 16:17:25 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav

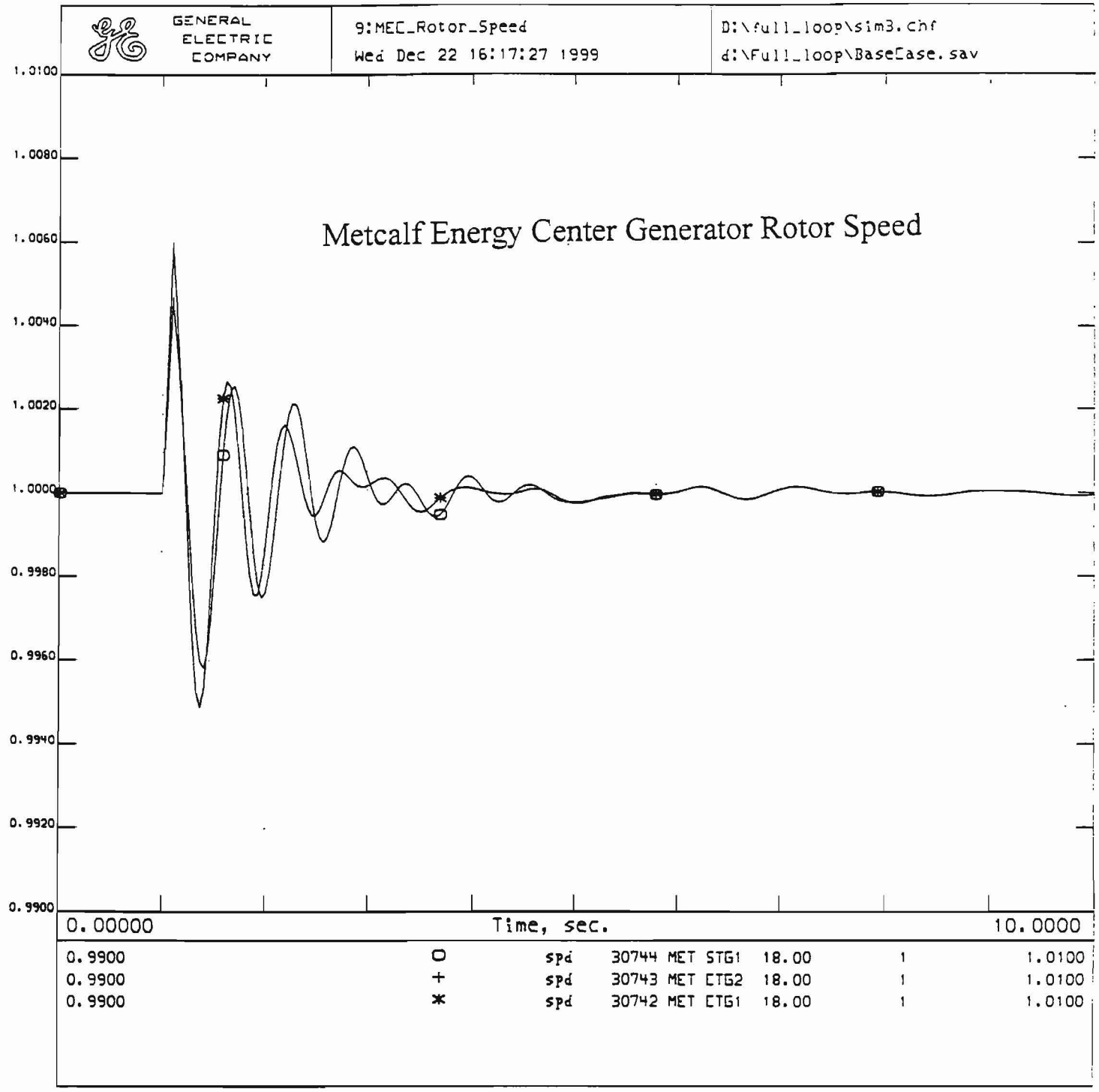


0.2000	o	vt	30744 MET STG1	18.00	1	1.2000
0.2000	+	vt	30743 MET CTG2	18.00	1	1.2000
0.2000	*	vt	30742 MET CTG1	18.00	1	1.2000

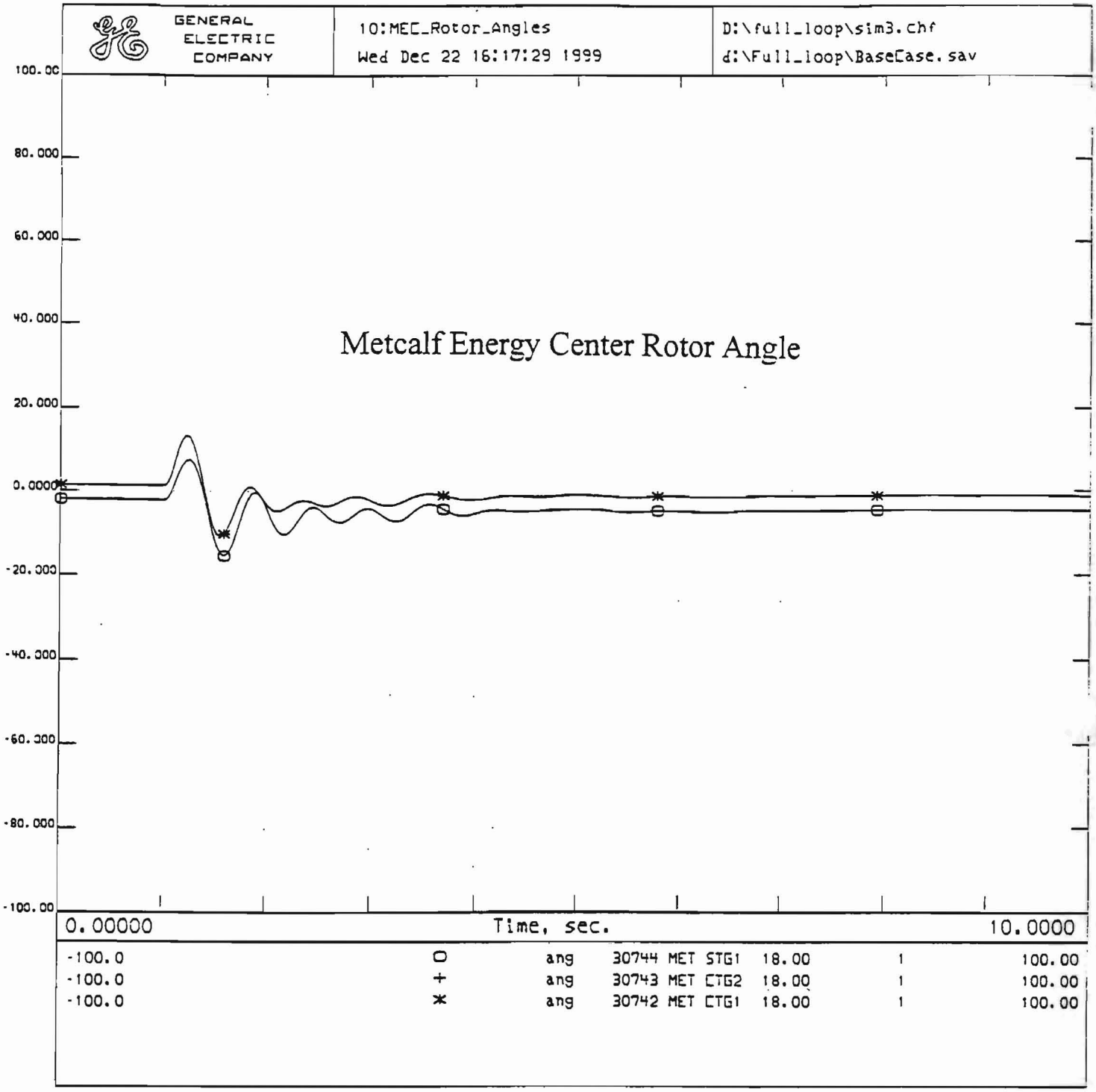
2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12



2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

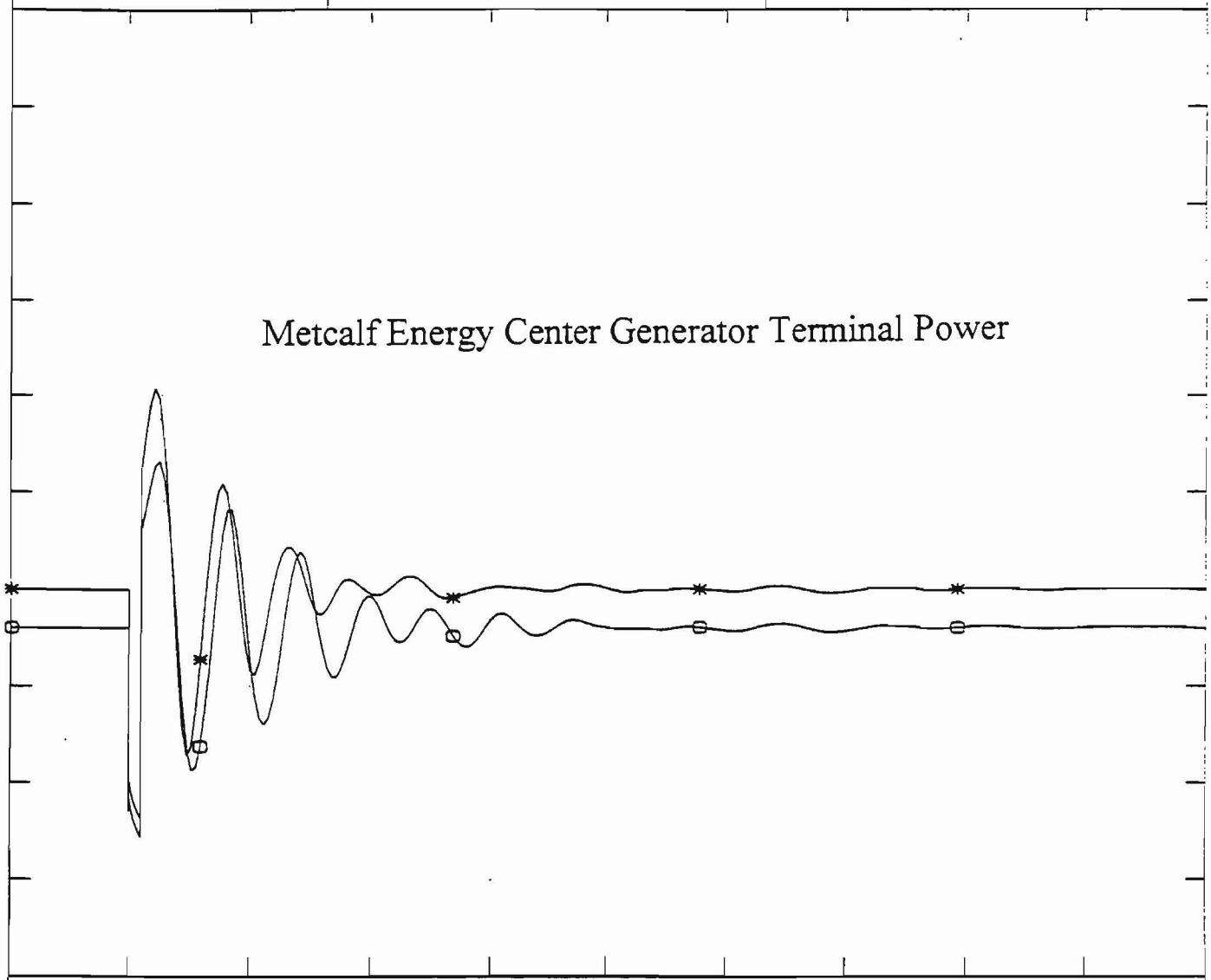


2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12



2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY	11:MEC_Terminal_Powe Wed Dec 22 16:17:30 1999	D:\full_loop\sim3.chf d:\Full_loop\BaseCase.sav



0.00000 Time, sec. 10.0000

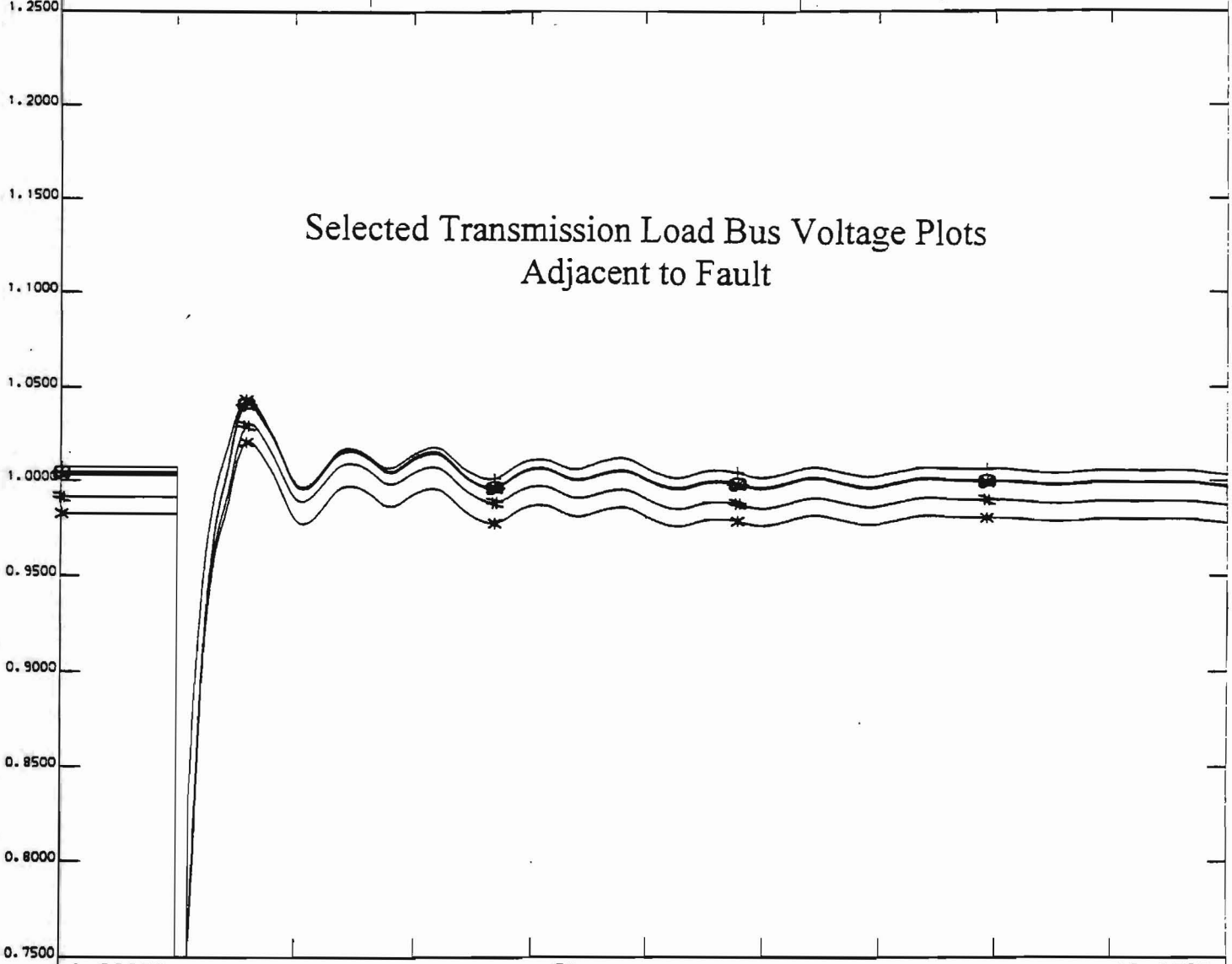
0.0000	o	pg	30744	MET STG1	18.00	1	554.00
0.0000	+	pg	30743	MET CTG2	18.00	1	500.00
0.0000	*	pg	30742	MET CTG1	18.00	1	500.00

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

12:Bus_Voltage
Wed Dec 22 16:17:31 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav



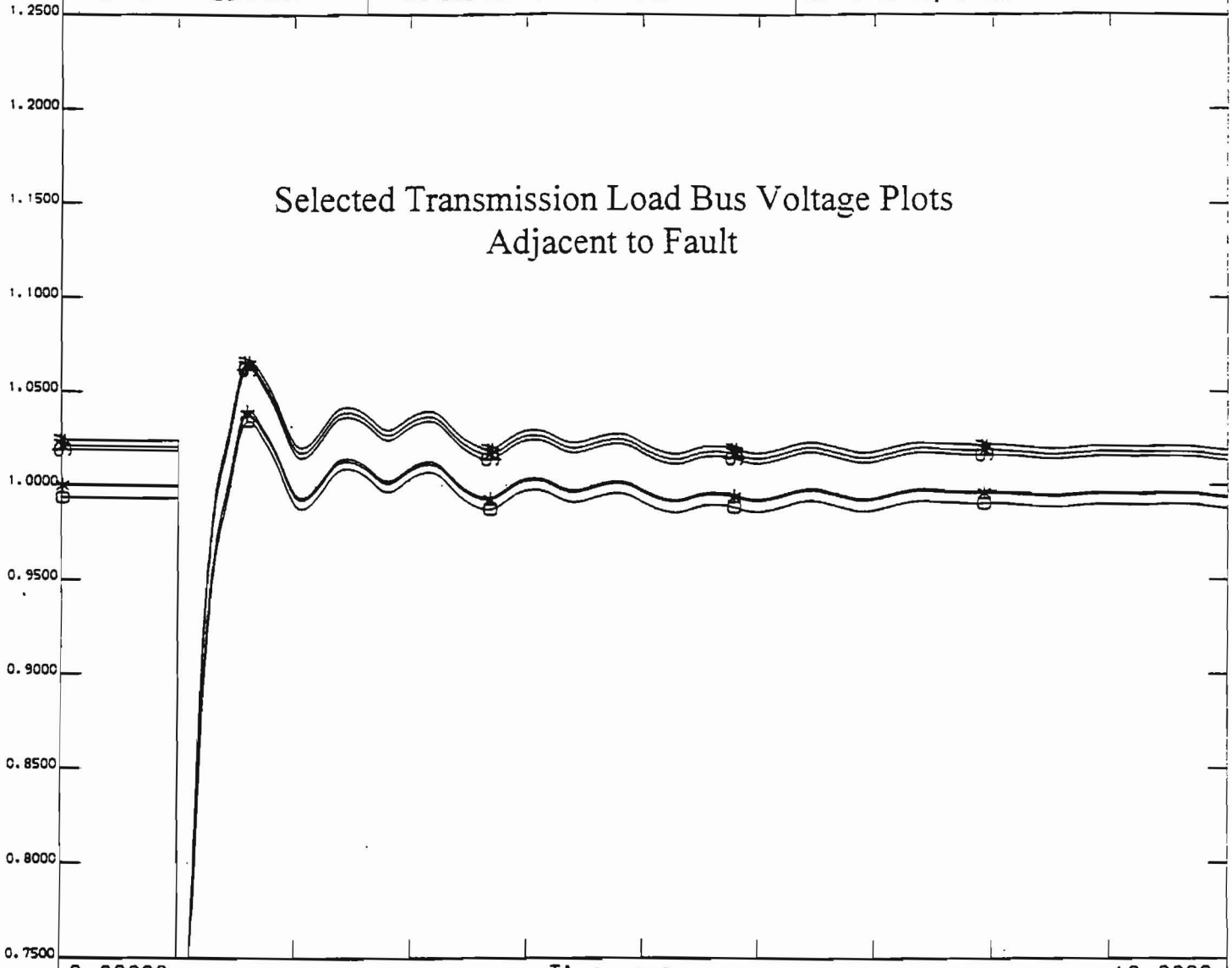
0.7500	o	vbus	30741	CAL METC	230.00	1	1.2500
0.7500	+	vbus	30624	TESLA E	230.00	1	1.2500
0.7500	*	vbul	30631	NEWARK E	230.00	1	1.2500
0.7500	#	vbus	30700	SANMATEO	230.00	1	1.2500
0.7500	x	vbus	30705	MONTAVIS	230.00	1	1.2500
0.7500	⊕	vbus	30735	METCALF	230.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

13:Load_Bus_Voltages
Wed Dec 22 16:17:33 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav



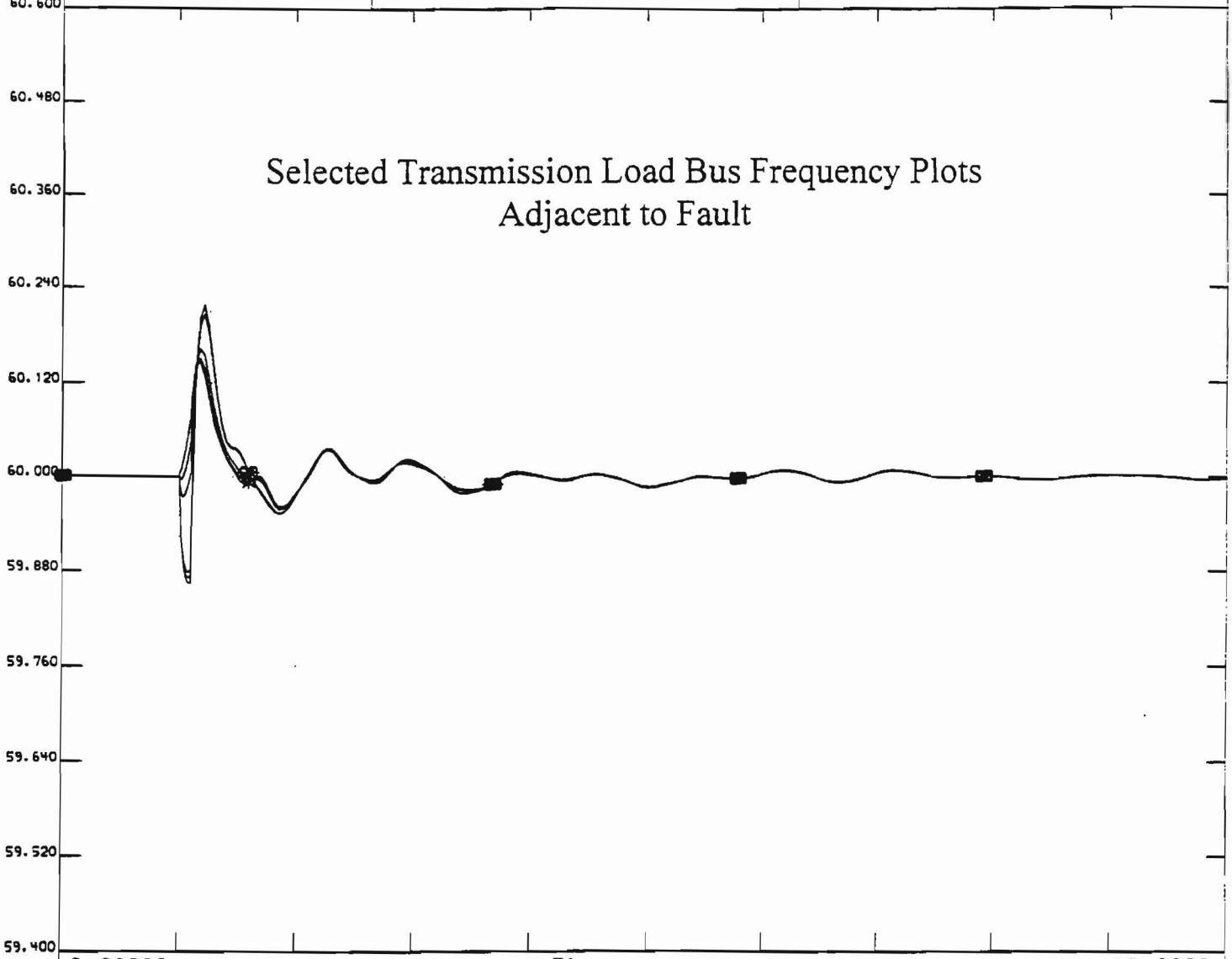
0.7500	o	vbul	30711 S.L.A.C. 230.00	1	1.2500
0.7500	+	vbul	30720 SARATOGA 230.00	1	1.2500
0.7500	*	vbul	30730 HICKS 230.00	1	1.2500
0.7500	#	vbul	35353 MT VIEW 115.00	1	1.2500
0.7500	x	vbul	35362 LOCKHD 2 115.00	1	1.2500
0.7500	$	vbul	35368 BRITTONP 115.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

GENERAL ELECTRIC COMPANY

14:Load_Frequency
Wed Dec 22 16:17:35 1999

D:\full_loop\sim3.chf
d:\Full_loop\BaseCase.sav

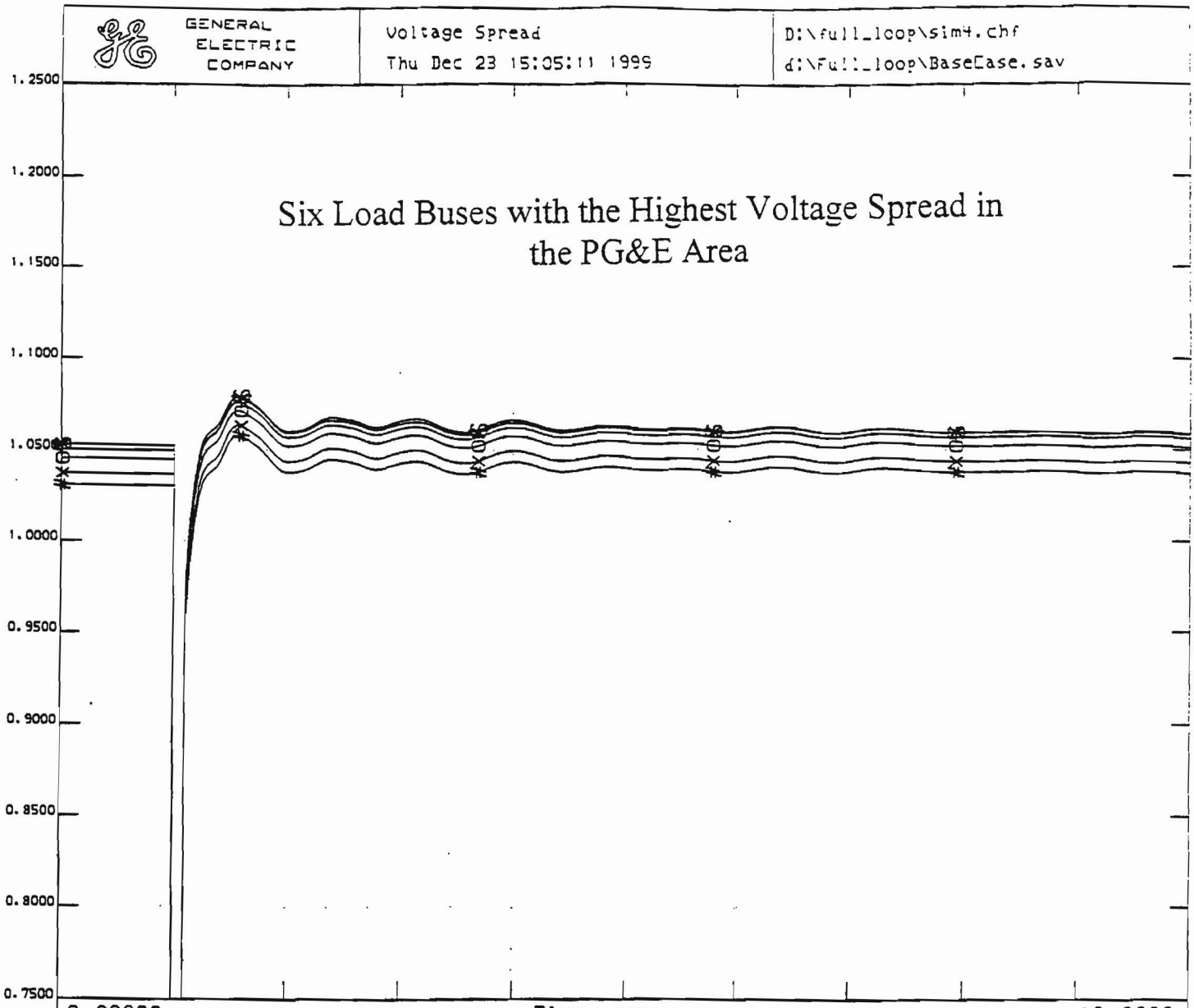


59.400	o	fbul	30711 S.L.A.C. 230.00	1	60.600
59.400	+	fbul	30720 SARATOGA 230.00	1	60.600
59.400	*	fbul	30730 HICKS 230.00	1	60.600
59.400	#	fbul	35353 MT VIEW 115.00	1	60.600
59.400	x	fbul	35362 LOCKHD 2 115.00	1	60.600
59.400	⊗	fbul	35368 BRITTONP 115.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
BASE CASE
(T-1): 3-phase fault at Metcalf 500 kV bus
followed by loss of METCALF 500/230 kV bank #12

Attachment 7d:
Stability Plots
for

Loss of the Moss Landing - Green Valley Double Circuit Tower Lines due to a fault (Level C disturbance)



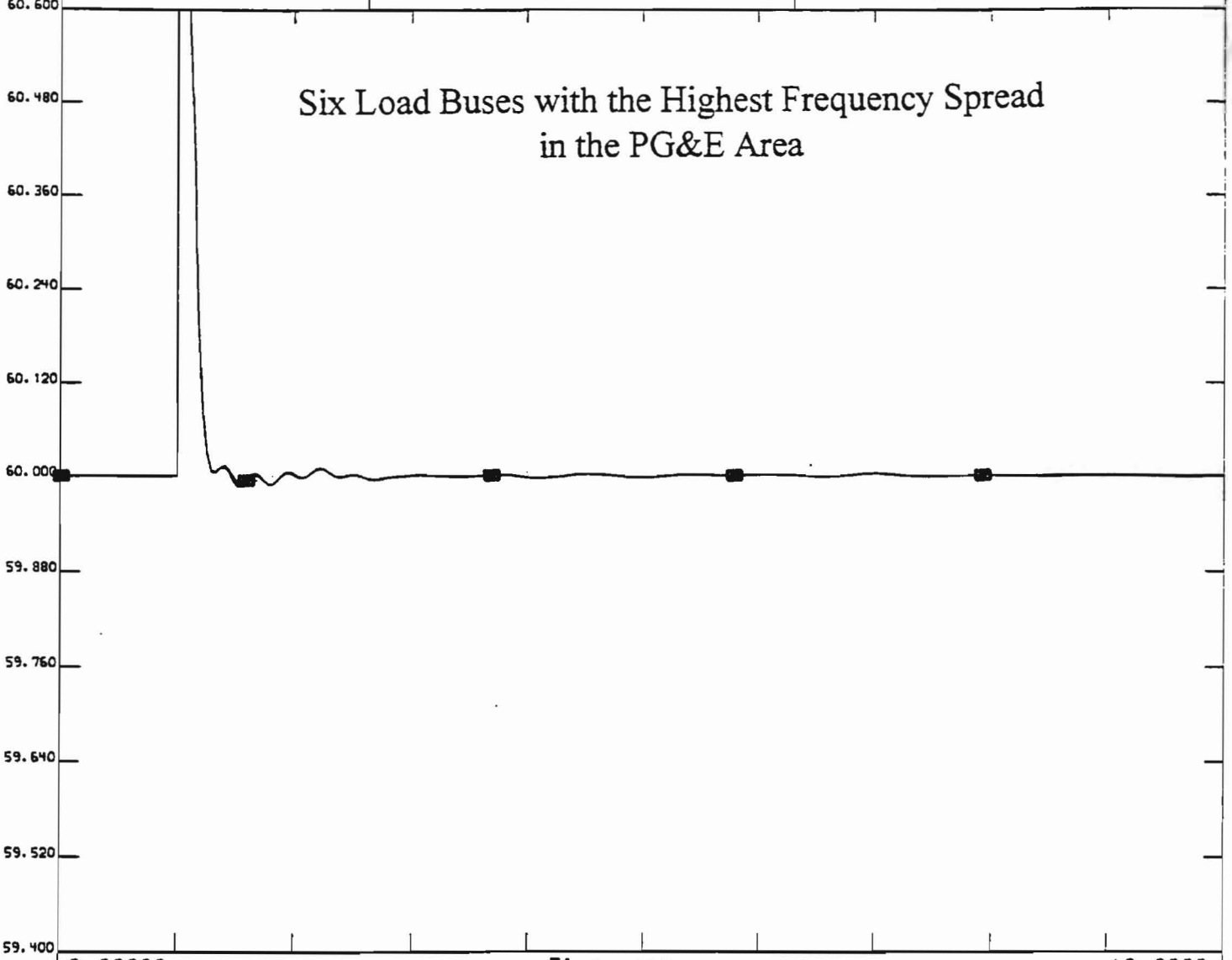
0.7500	O	vbul	35916 PRUNEDLE 115.00	1	1.2500
0.7500	+	vbul	35924 CSTRVLLE 115.00	1	1.2500
0.7500	*	vbul	35926 DOLAN RD 115.00	1	1.2500
0.7500	#	vbul	35929 DEL MNTE 115.00	1	1.2500
0.7500	X	vbul	35940 HOLST C 115.00	1	1.2500
0.7500	⊗	vbul	36206 SLDAD ST 12.47	1	1.2500

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

GENERAL ELECTRIC COMPANY

Frequency Spread
Thu Dec 23 15:05:56 1999

D:\full_loop\sim4.chf
d:\Full_loop\BaseCase.sav



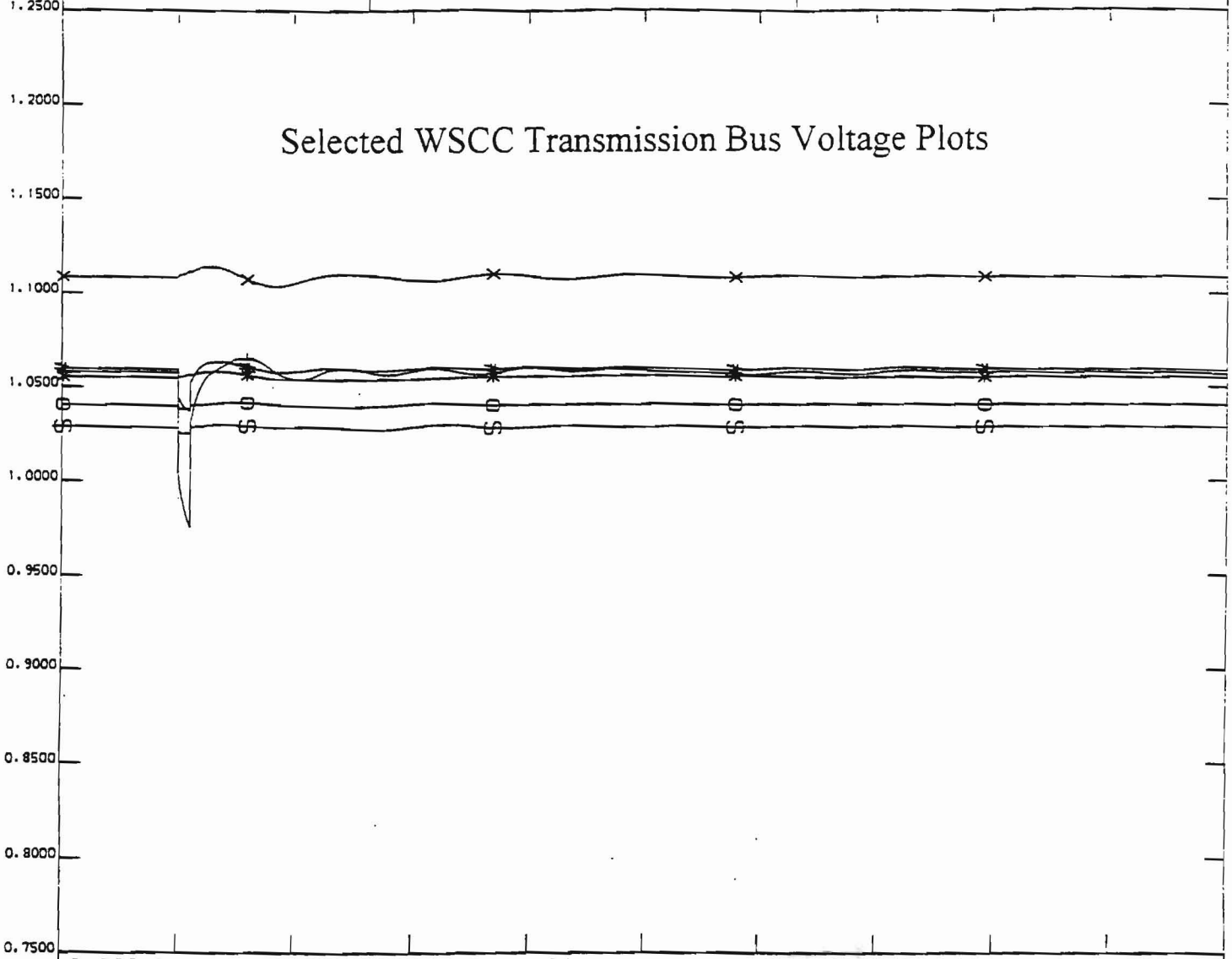
59.400	o	fbul	35929	DEL MNTE	115.00	1	60.600
59.400	+	fbul	36036	MONTEREY	60.00	1	60.600
59.400	*	fbul	36037	NVY SCHL	60.00	1	60.600
59.400	#	fbul	36038	VIEJO	60.00	1	60.600
59.400	x	fbul	36039	HATTON	60.00	1	60.600
59.400	$	fbul	36041	NAVY LAB	60.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

GENERAL ELECTRIC COMPANY

1:WSCC_Bus_Voltages
Wed Dec 22 17:02:03 1999

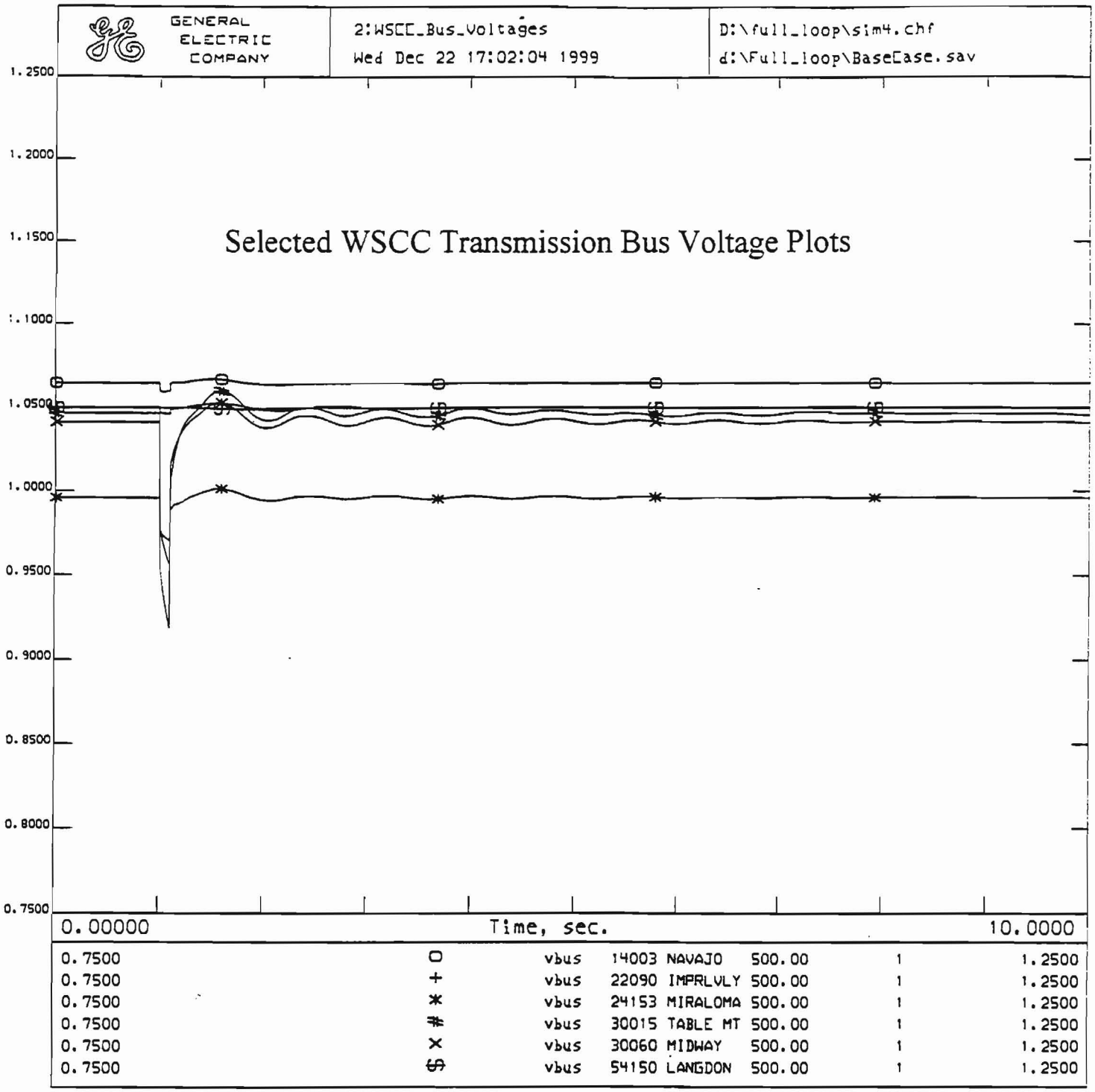
D:\full_loop\sim4.chf
d:\Full_loop\BaseCase.sav



0.00000	Time, sec.	10.0000

0.7500	O	vbus	14001	FOURCORN	500.00	1	1.2500
0.7500	+	vbus	40687	MALIN	500.00	1	1.2500
0.7500	*	vbus	50662	NIC500	500.00	1	1.2500
0.7500	#	vbus	60240	MIDPOINT	500.00	1	1.2500
0.7500	X	vbus	62012	TOWN2	500.00	1	1.2500
0.7500	$	vbus	66340	SIGURD	345.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

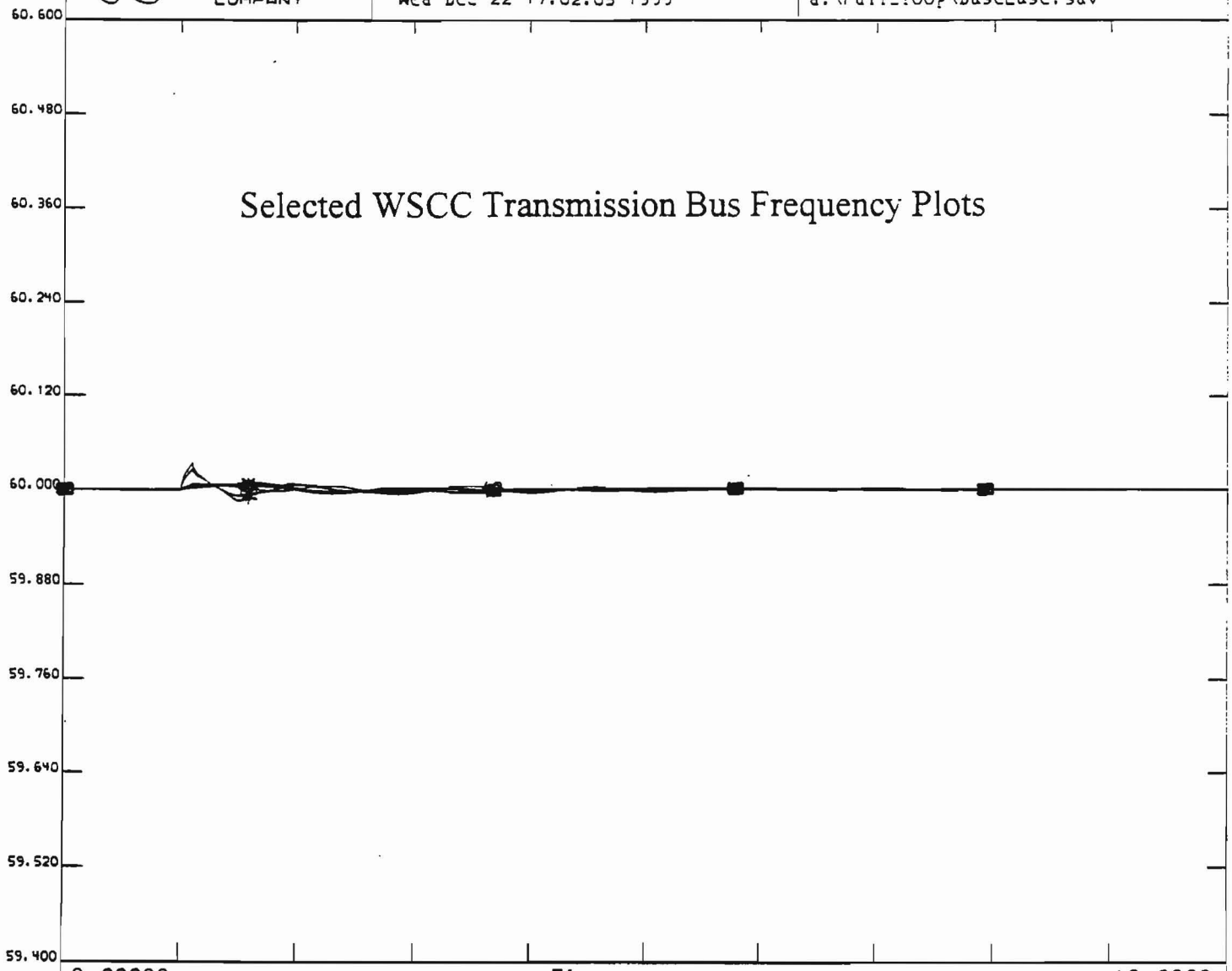


2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

GENERAL ELECTRIC COMPANY

3:WSCC_Bus_Frequency
Wed Dec 22 17:02:05 1999

D:\full_loop\sim4.chf
d:\full_loop\BaseCase.sav



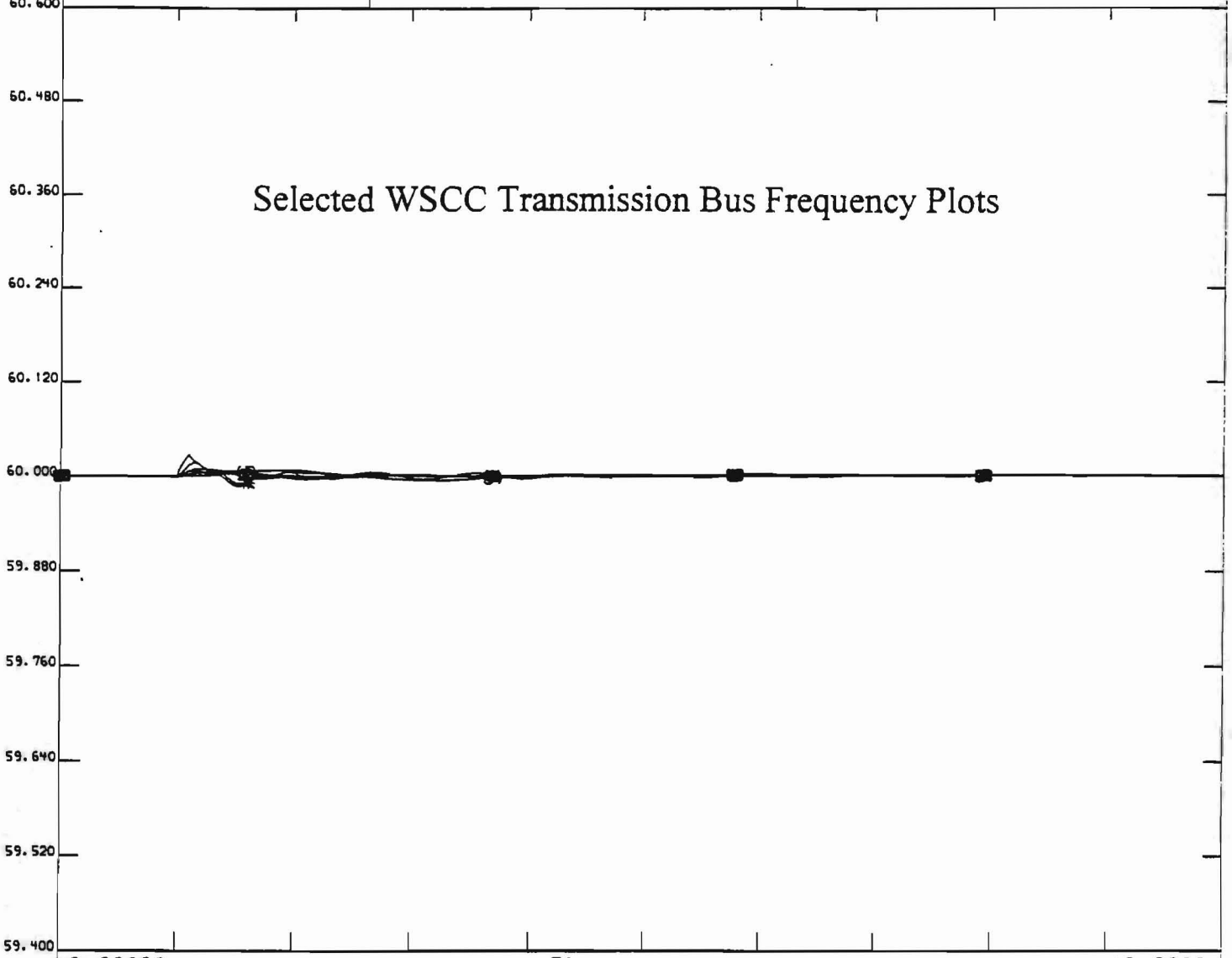
59.400	O	fbus	14001	FOURCORN	500.00	1	60.600
59.400	+	fbus	40687	MALIN	500.00	1	60.600
59.400	*	fbus	50662	NIC500	500.00	1	60.600
59.400	#	fbus	60240	MIDPOINT	500.00	1	60.600
59.400	X	fbus	62012	TOWN2	500.00	1	60.600
59.400	$	fbus	66340	SIGURD	345.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

GENERAL ELECTRIC COMPANY

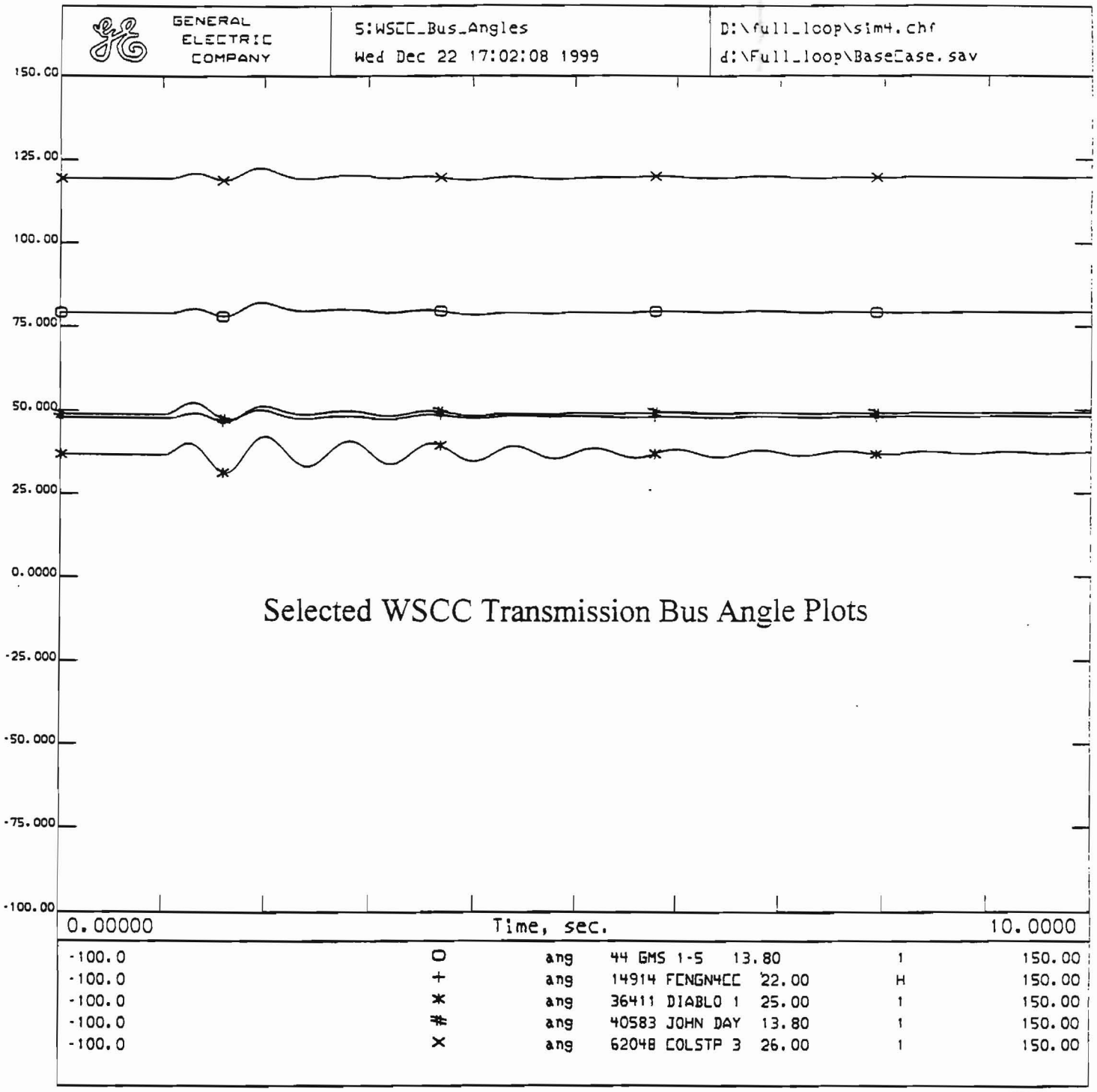
4:WSCC_Bus_Frequency
Wed Dec 22 17:02:06 1999

D:\full_loop\sim4.chf
d:\Full_loop\BaseCase.sav

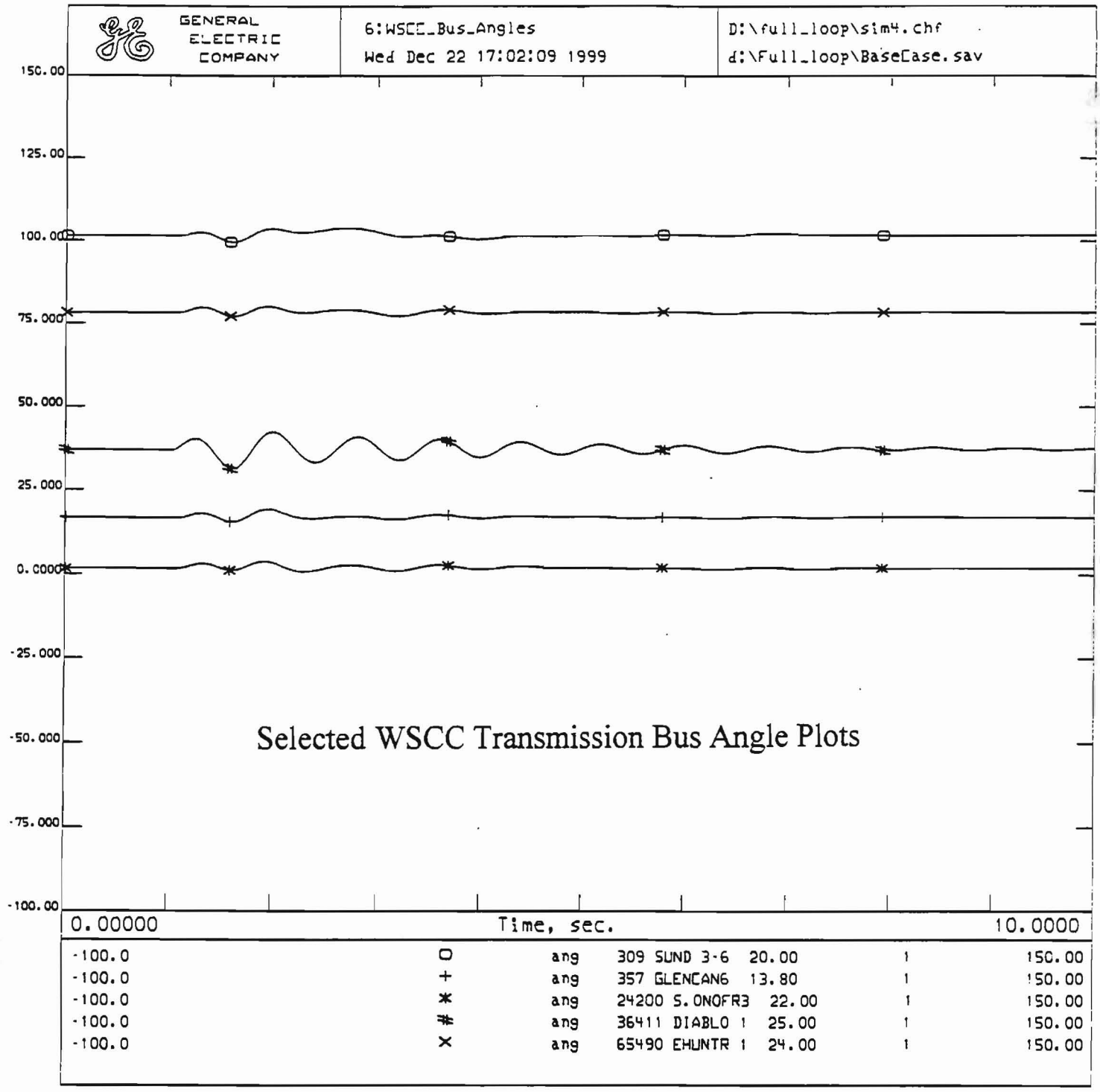


59.400	O	fbus	14003 NAVAJO	500.00	1	60.600
59.400	+	fbus	22090 IMPRLVLY	500.00	1	60.600
59.400	*	fbus	24153 MIRALOMA	500.00	1	60.600
59.400	#	fbus	30015 TABLE MT	500.00	1	60.600
59.400	X	fbus	30060 MIDWAY	500.00	1	60.600
59.400	⊗	fbus	54150 LANGDON	500.00	1	60.600

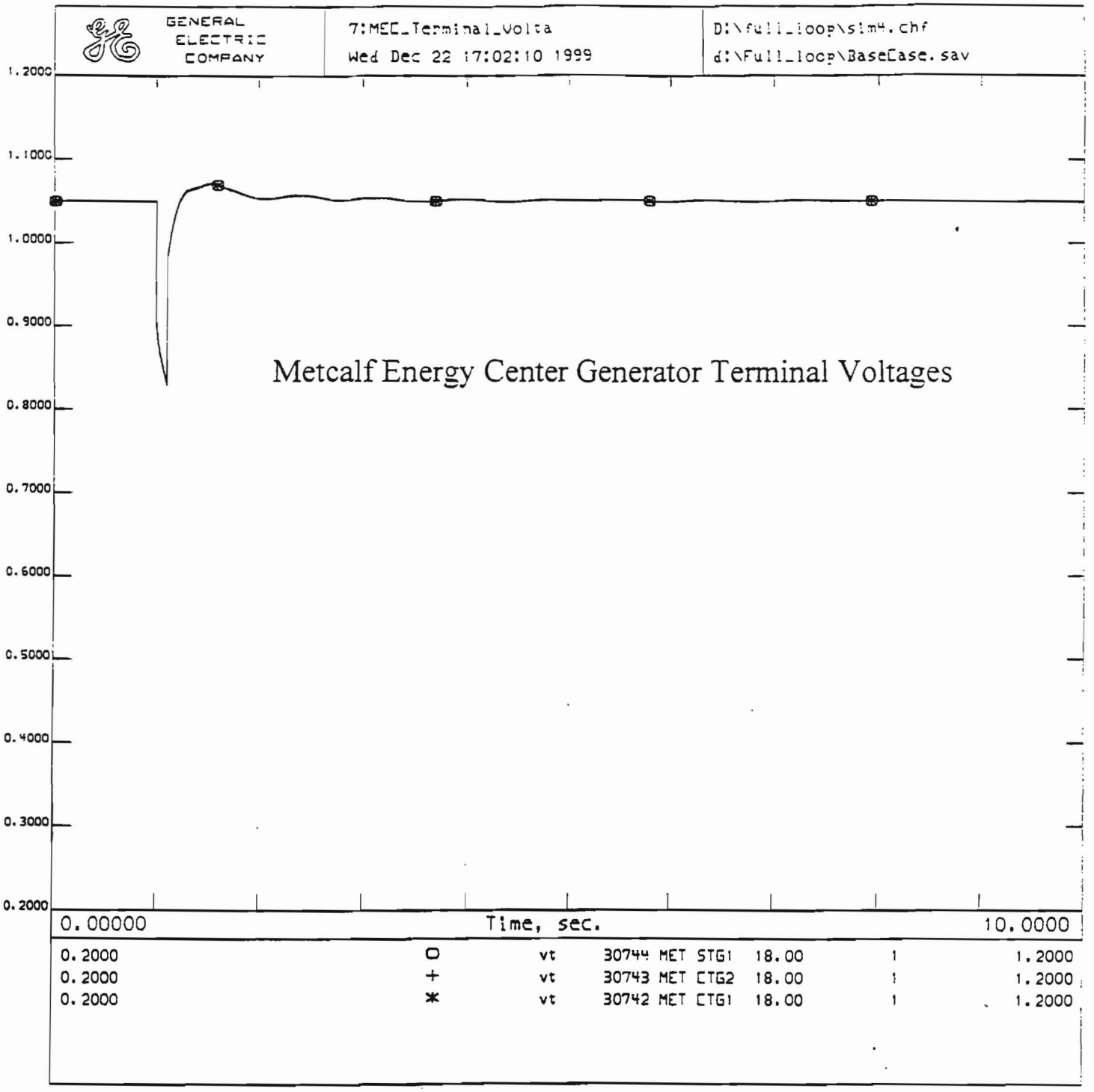
2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.



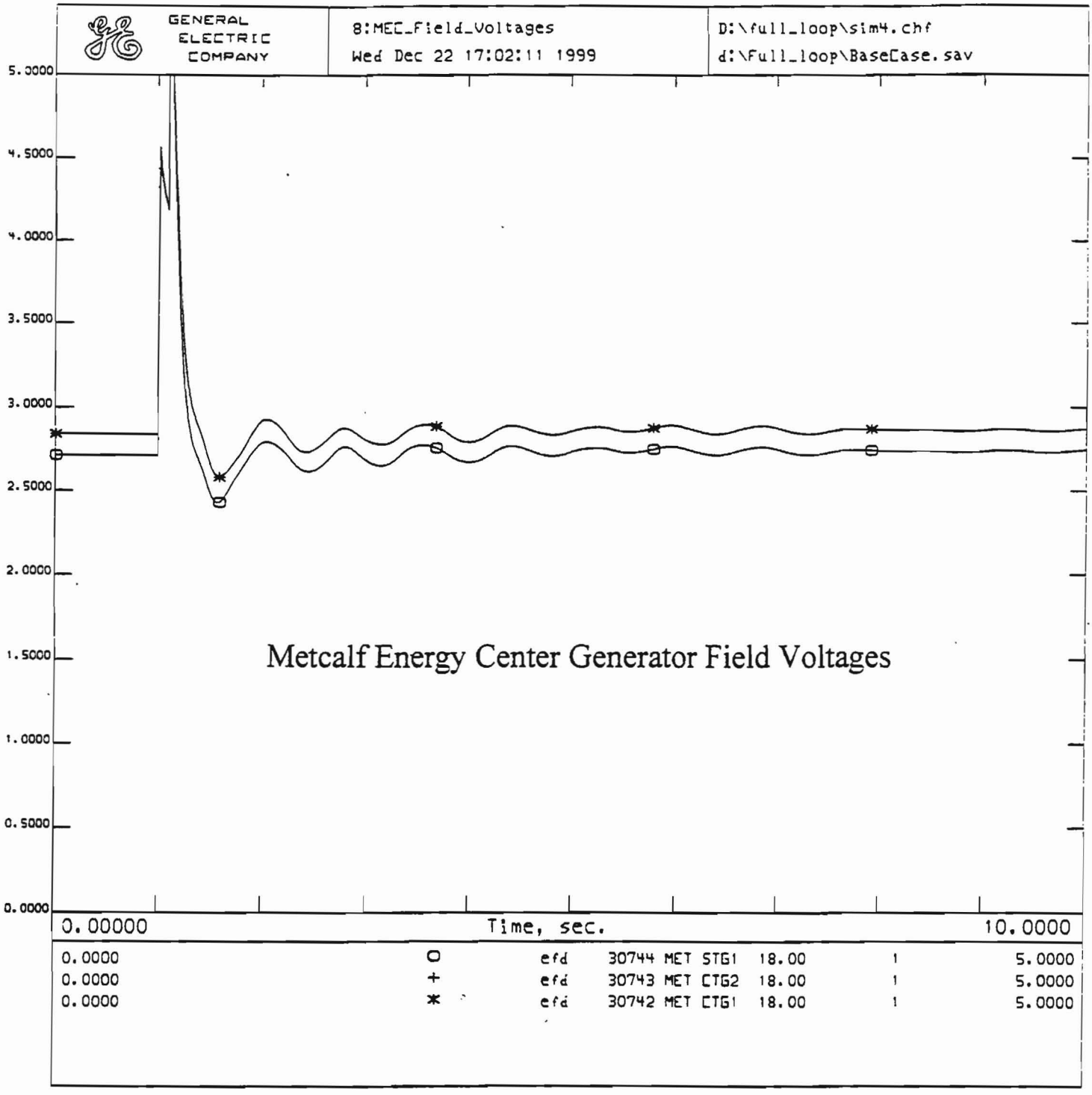
2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.



2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.



2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

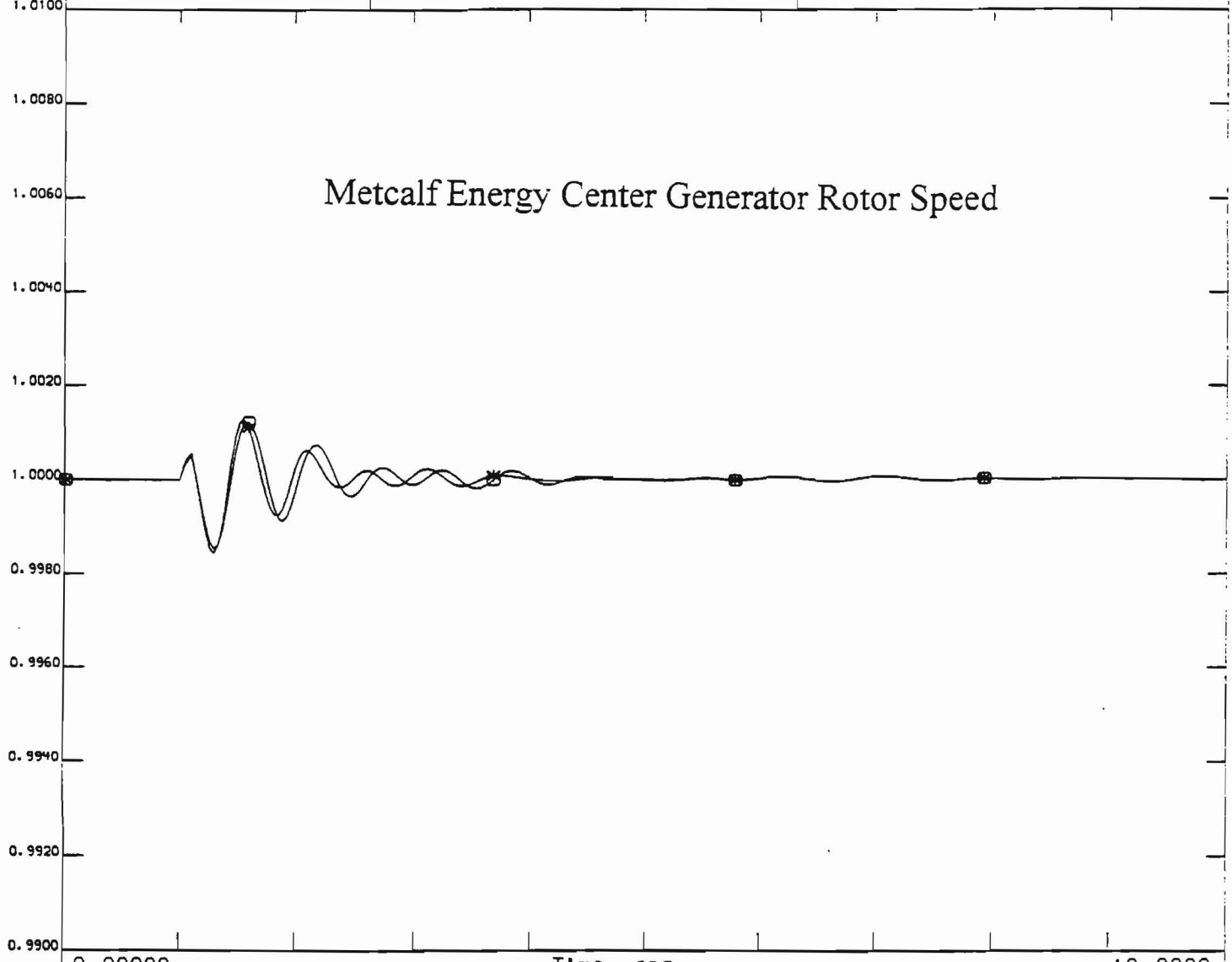


2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

GENERAL ELECTRIC COMPANY

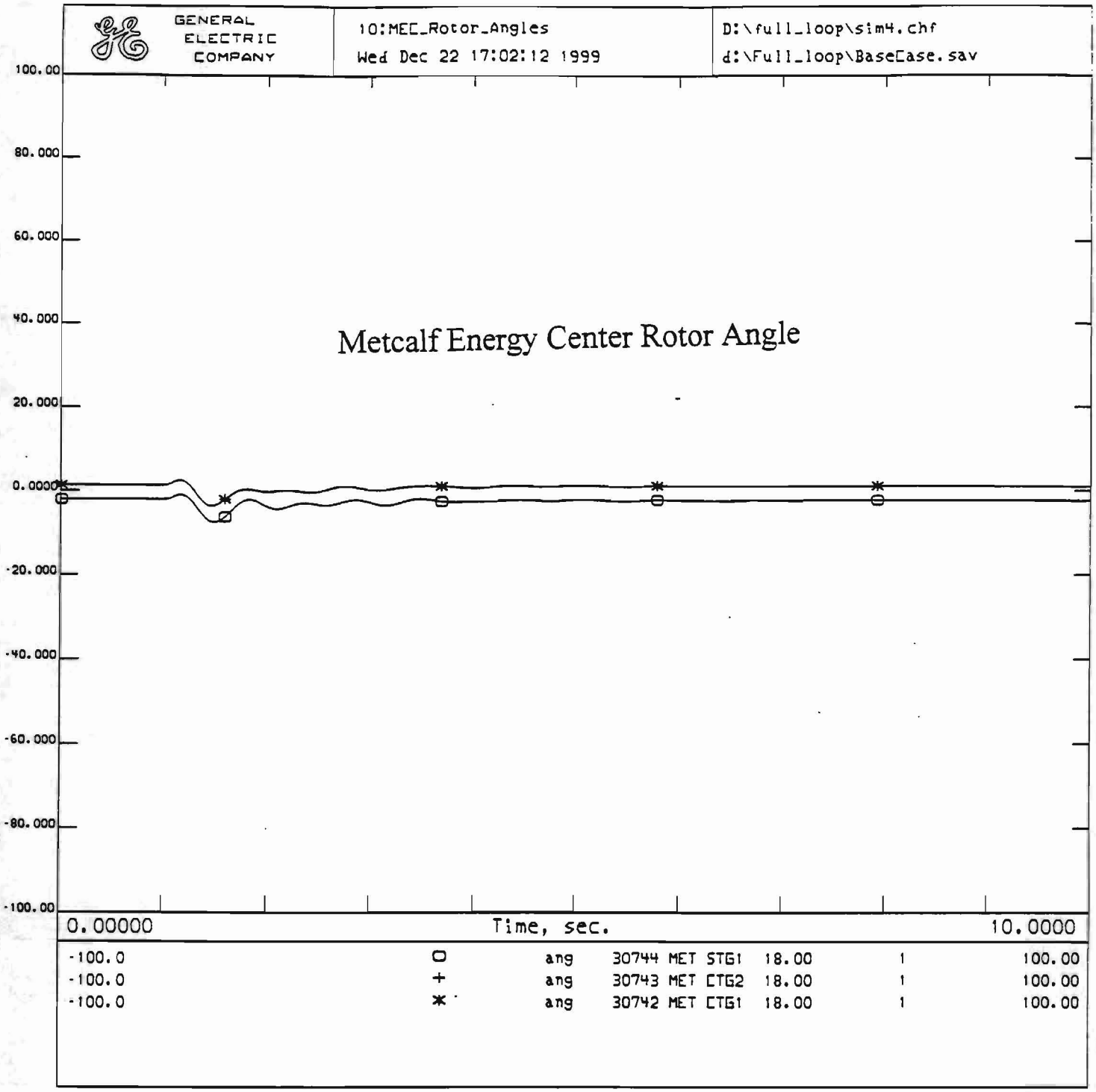
9:MEC_Rotor_Speed
Wed Dec 22 17:02:11 1999

D:\full_loop\sim4.chf
d:\Full_loop\BaseCase.sav



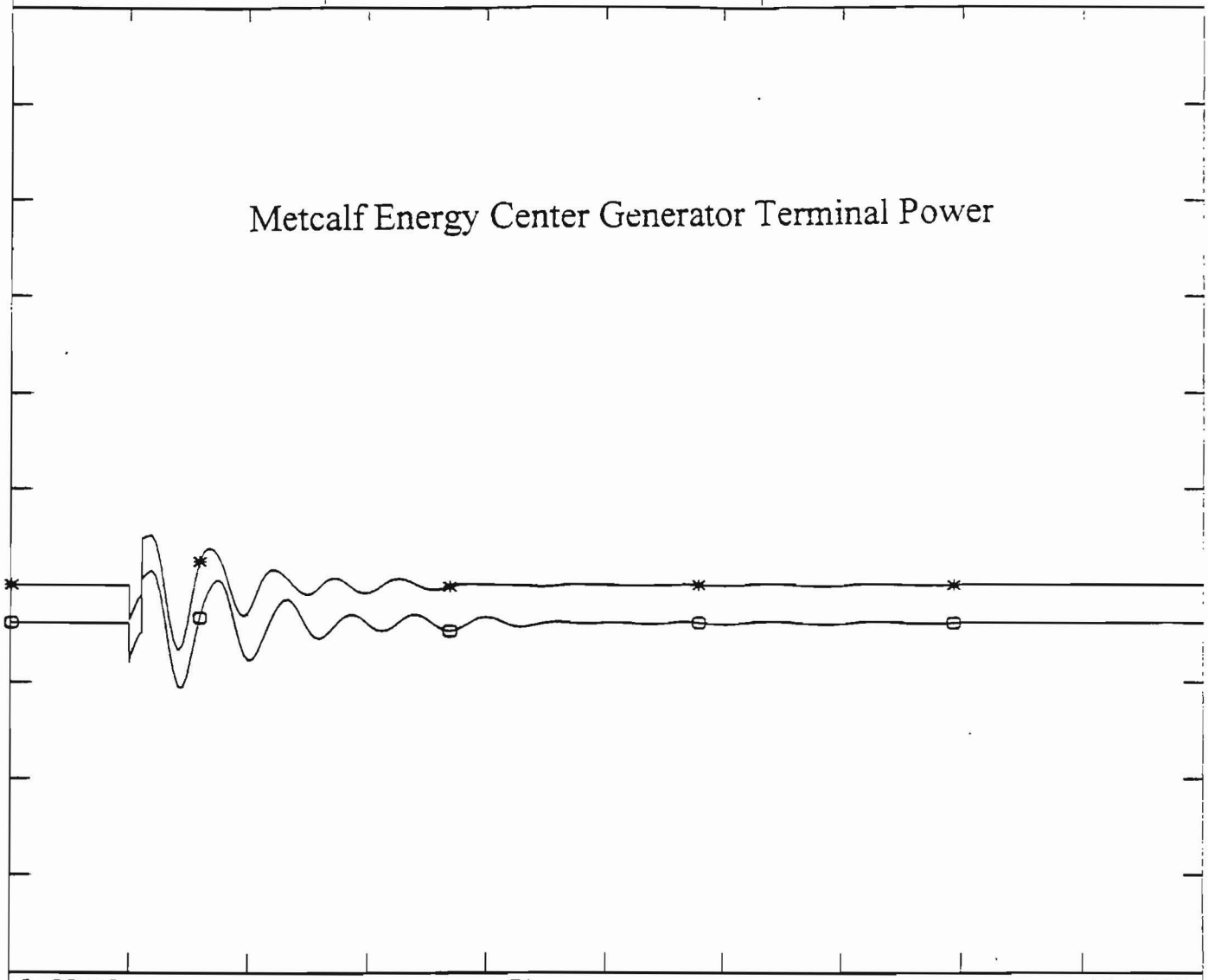
0.9900	o	spd	30744 MET STG1	18.00	1	1.0100
0.9900	+	spd	30743 MET CTG2	18.00	1	1.0100
0.9900	*	spd	30742 MET CTG1	18.00	1	1.0100

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.



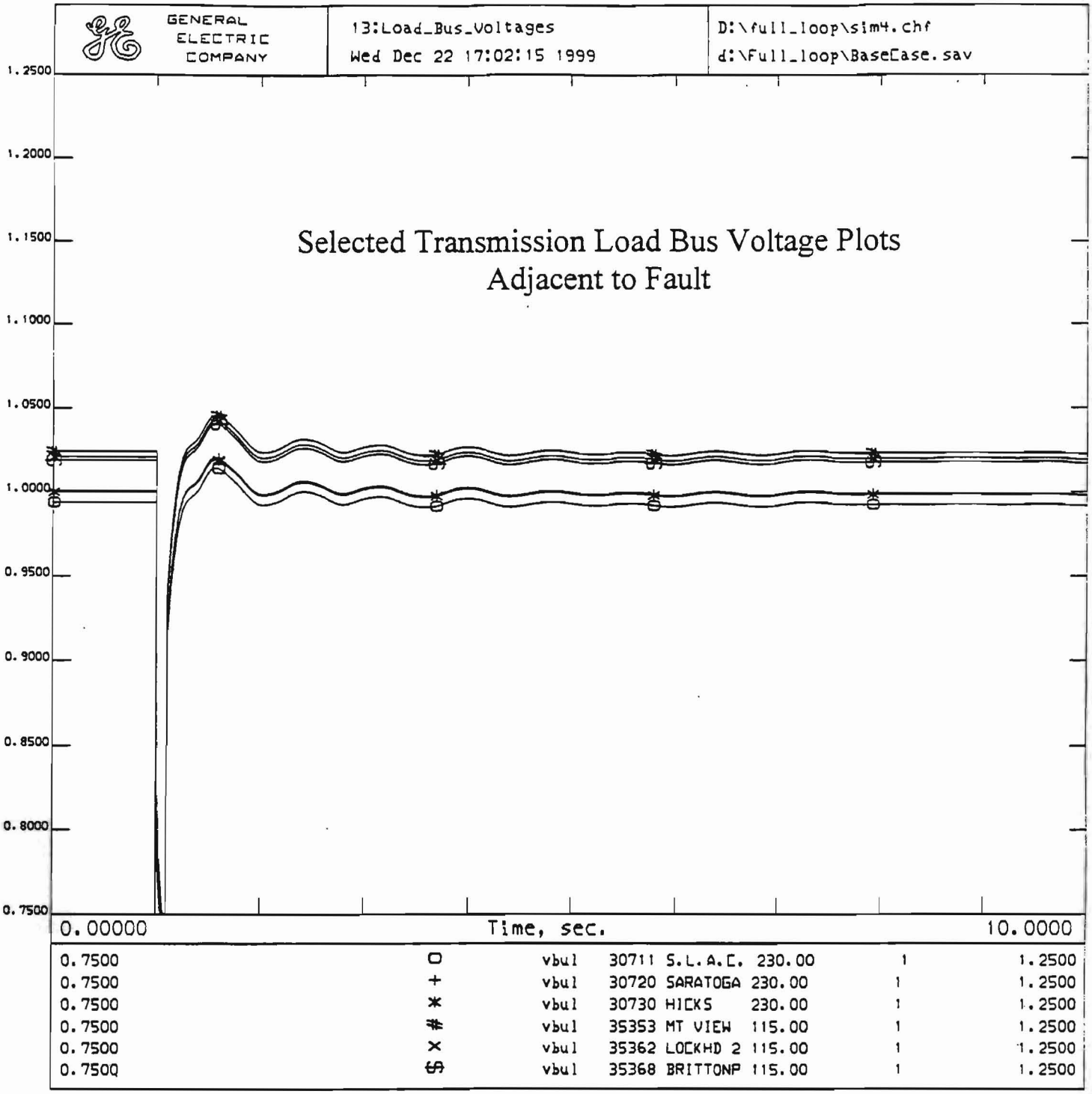
2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

GENERAL ELECTRIC COMPANY	11:MEC_Terminal_Powe Wed Dec 22 17:02:13 1999	D:\full_loop\sim4.chf d:\Full_loop\BaseCase.sav



0.0000	o	pg	30744 MET STG1	18.00	1	554.00
0.0000	+	pg	30743 MET CTG2	18.00	1	500.00
0.0000	*	pg	30742 MET CTG1	18.00	1	500.00

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

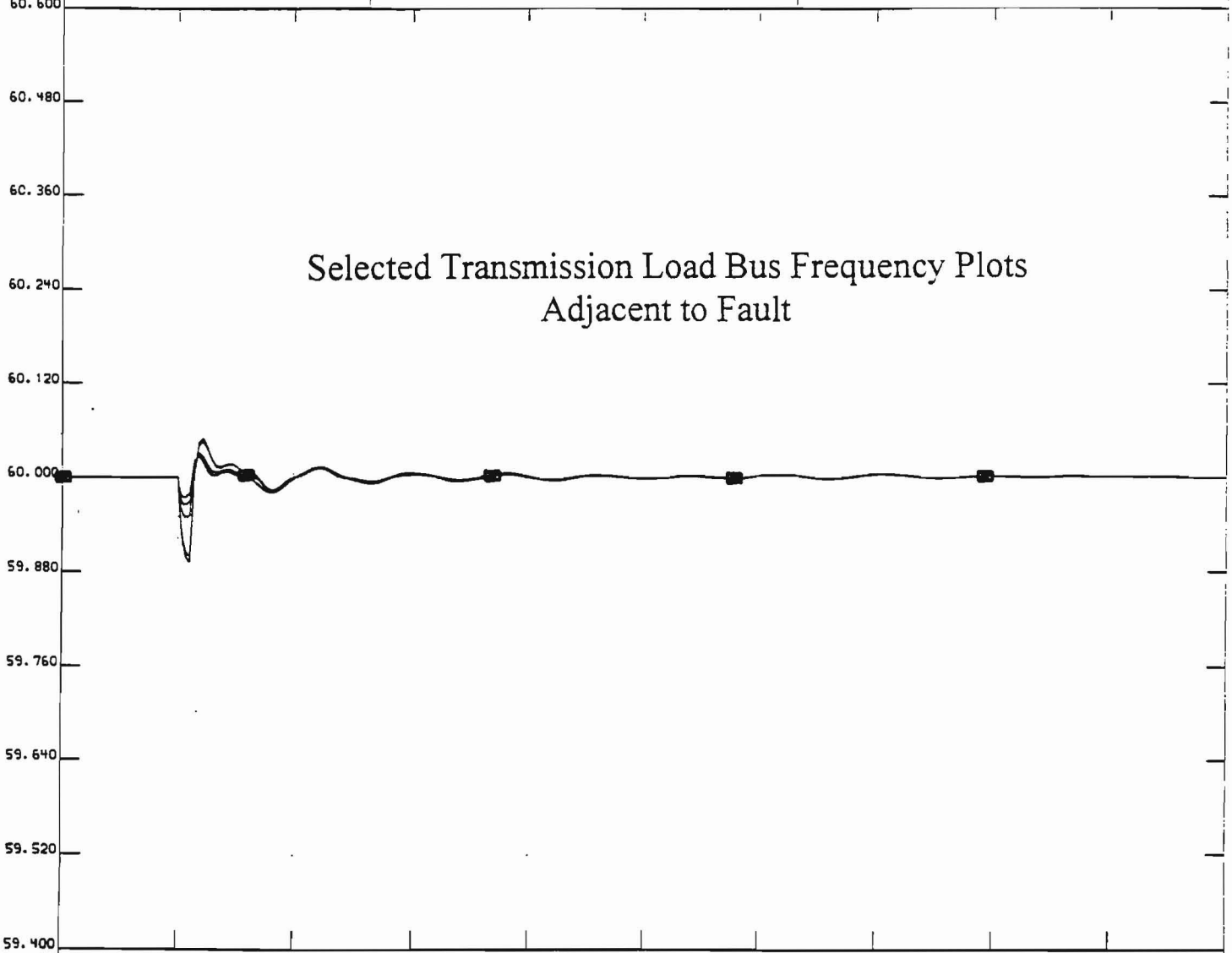


2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

GENERAL ELECTRIC COMPANY

14:Load_Frequency
Wed Dec 22 17:02:16 1999

D:\full_loop\sim4.chf
d:\Full_loop\BaseCase.sav



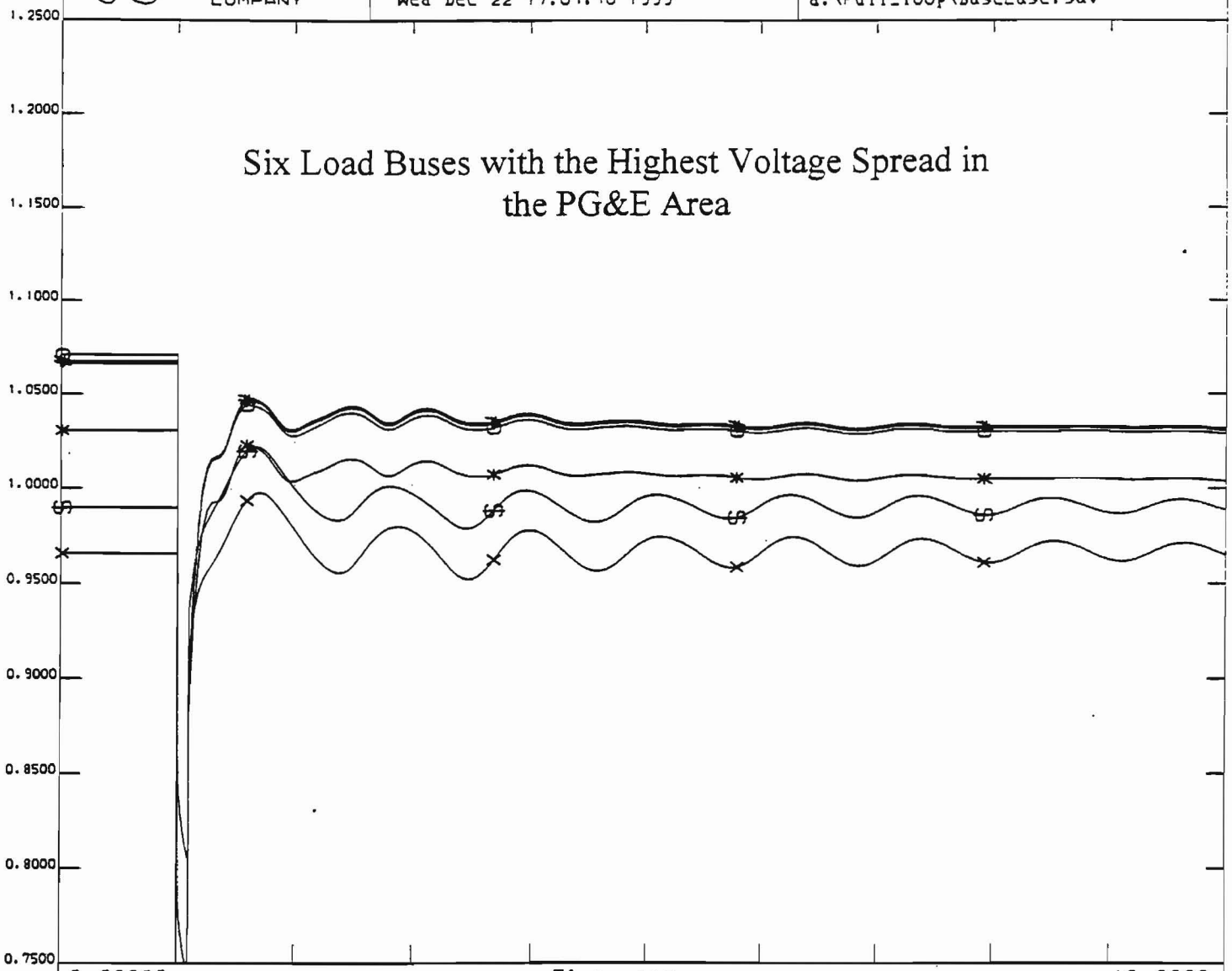
59.400	o	fbul	30711 S.L.A.C. 230.00	1	60.600
59.400	+	fbul	30720 SARATOGA 230.00	1	60.600
59.400	*	fbul	30730 HICKS 230.00	1	60.600
59.400	#	fbul	35353 MT VIEW 115.00	1	60.600
59.400	x	fbul	35362 LOCKHD 2 115.00	1	60.600
59.400	⊕	fbul	35368 BRITTONF 115.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

GENERAL ELECTRIC COMPANY

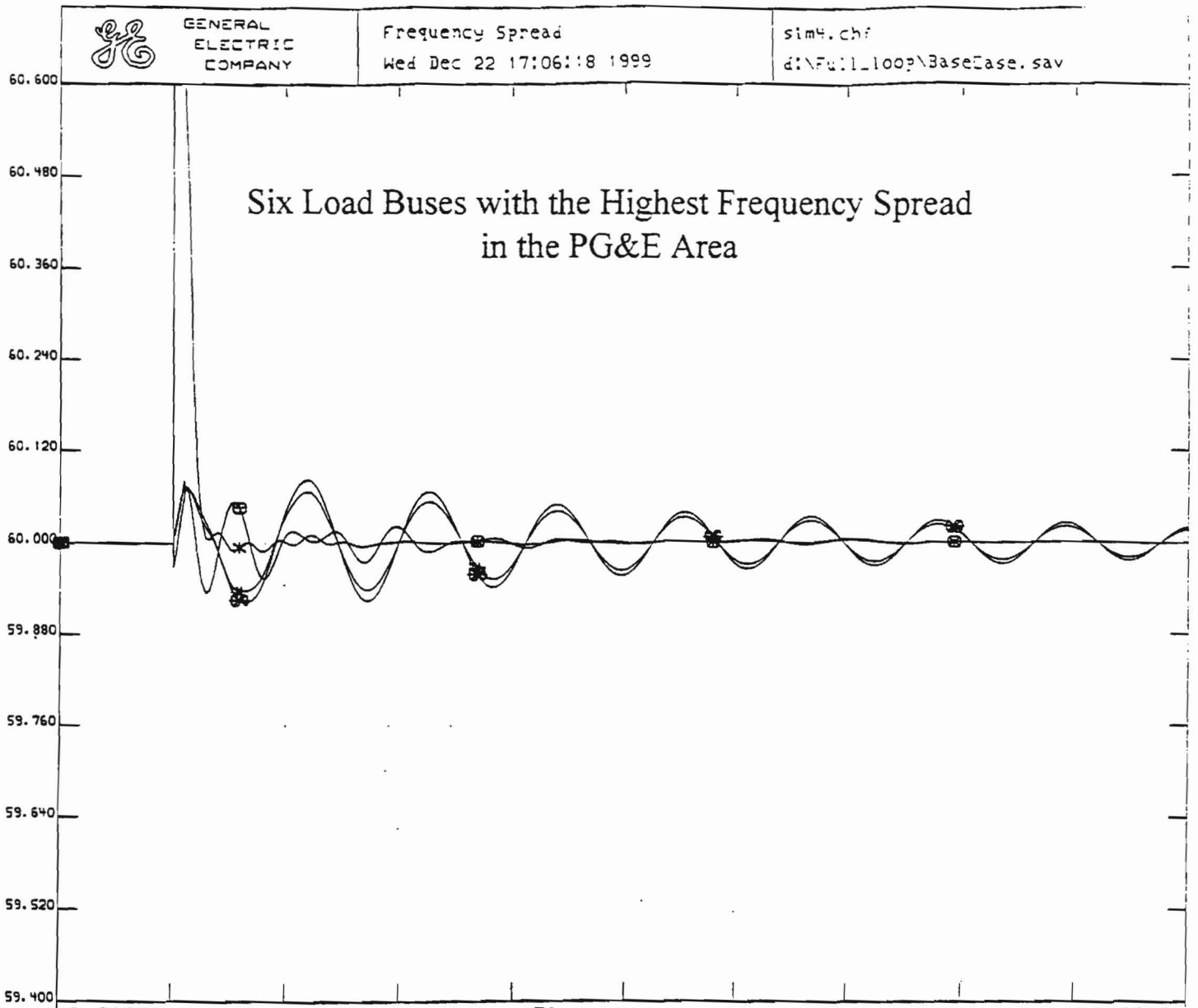
Voltage Spread
Wed Dec 22 17:04:40 1999

sim4.chf
d:\Full_loop\BaseCase.sav



0.7500	O	vbul	36010	ERTA	60.00	1	1.2500
0.7500	+	vbul	36012	WTSNVLLE	60.00	1	1.2500
0.7500	*	vbul	36015	GRANT RK	60.00	1	1.2500
0.7500	#	vbul	36016	SHAW TAP	60.00	1	1.2500
0.7500	×	vbul	36082	SAN ARDO	60.00	1	1.2500
0.7500	$	vbul	36085	TEXACO	60.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.



59.400	O	fbul	36012 WTSNVLLE	60.00	1	60.600
59.400	+	fbul	36016 SHAW TAP	60.00	1	60.600
59.400	*	fbul	36038 VIEJO	60.00	1	60.600
59.400	#	fbul	36082 SAN ARDO	60.00	1	60.600
59.400	X	fbul	36084 OILFLDS	60.00	1	60.600
59.400	⊗	fbul	36085 TEXACO	60.00	1	60.600

2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.

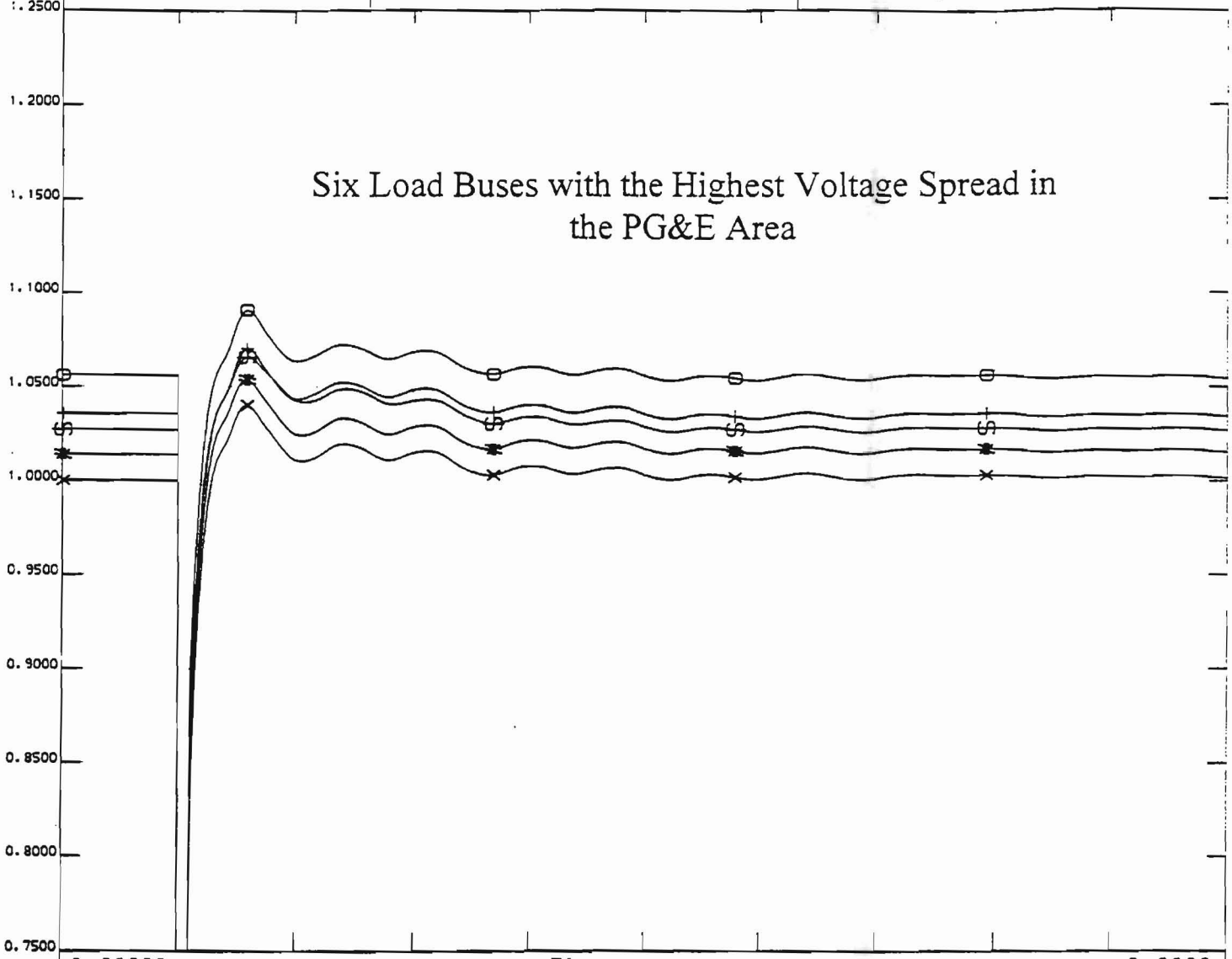
Attachment 7e:
Stability Plots
for

Loss of the Monta Vista 230 kV Bus #2 due to a fault (Level C disturbance)

GENERAL ELECTRIC COMPANY

Voltage Spread
Wed Dec 22 16:48:52 1999

D:\full_loop\sim5.chf
d:\Full_loop\BaseCase.sav



0.7500	o	vbul	33251	EMBRCDR2	34.50	1	1.2500
0.7500	+	vbul	33256	EMBRCDR1	12.00	1	1.2500
0.7500	*	vbul	33359	CAROLNDS	60.00	1	1.2500
0.7500	#	vbul	33360	HILLSDLE	60.00	1	1.2500
0.7500	x	vbul	33366	HLF MNBY	60.00	1	1.2500
0.7500	$	vbul	33386	STANFORD	60.00	1	1.2500

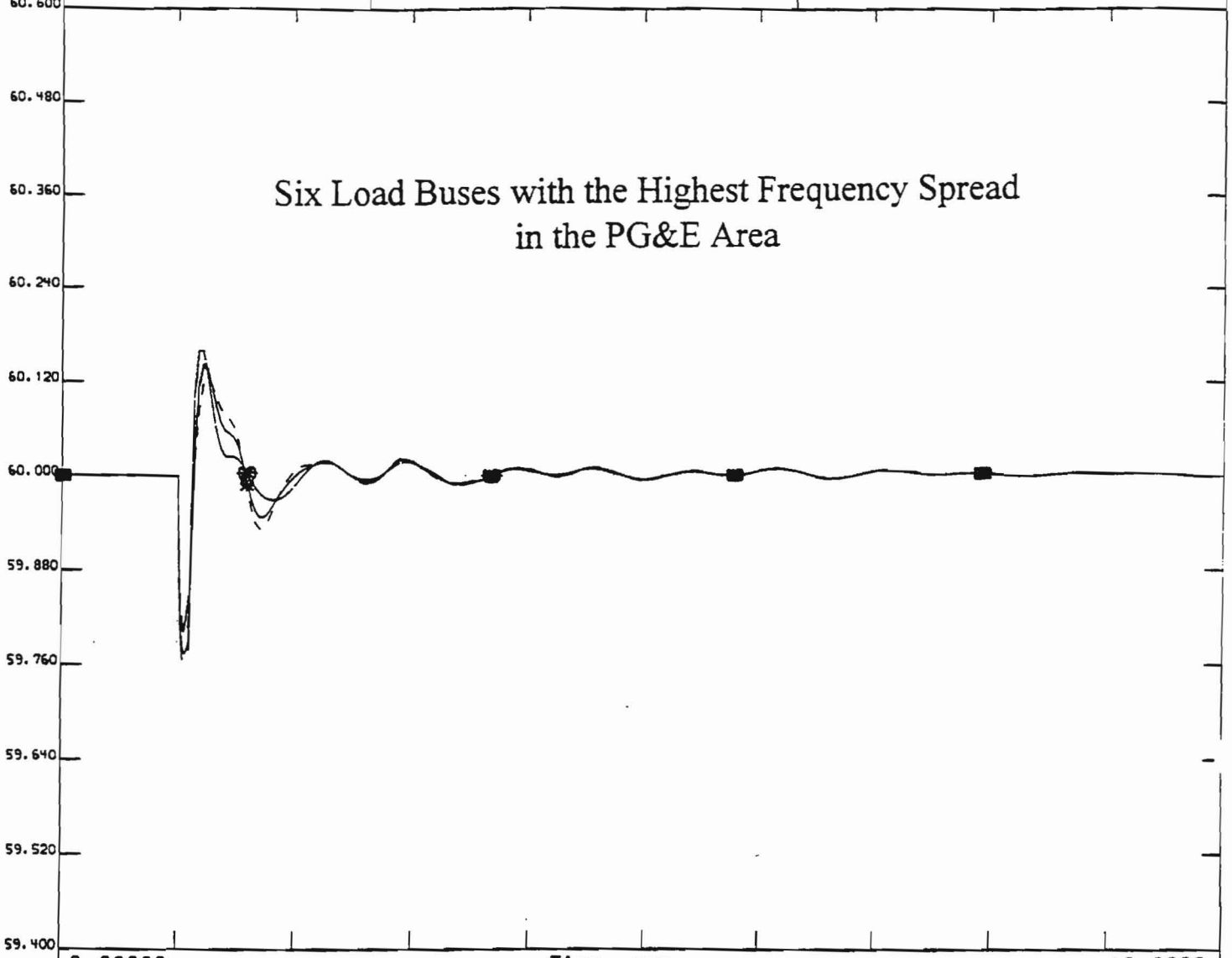
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2

GENERAL ELECTRIC COMPANY

Frequency Spread
Tue Dec 28 10:45:12 1999

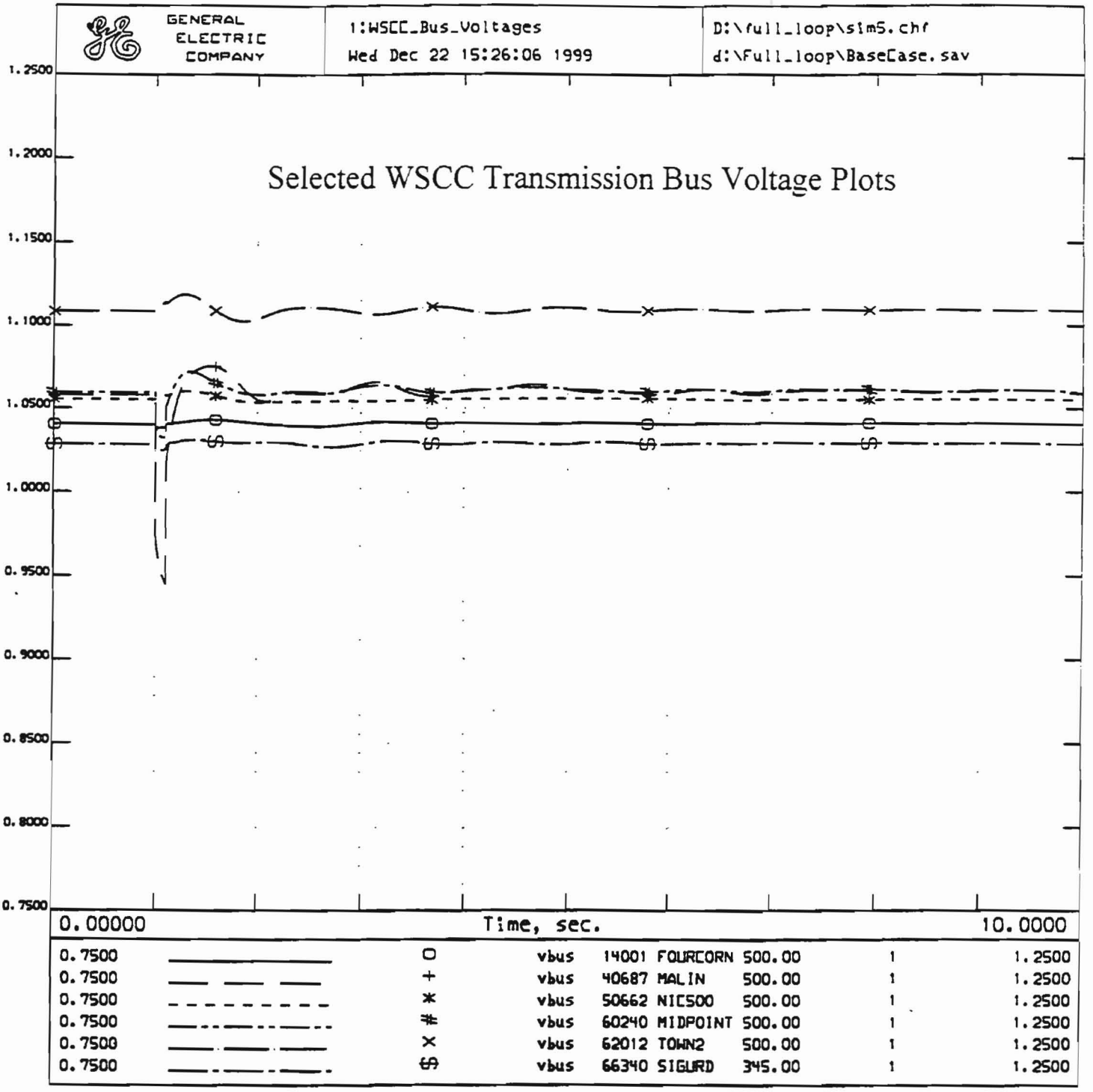
E:\e_ge\sim5.chf
d:\Full_loop\BaseCase.sav



59.400	———	O	fbul	33256	EMBRCDR1	12.00	1	60.600
59.400	— — —	+	fbul	33257	EMBRCDR2	12.00	1	60.600
59.400	- - - - - - - - -	*	fbul	33263	POTRERO2	12.00	1	60.600
59.400	—-—-—-—	#	fbul	35205	RADUM	60.00	1	60.600
59.400	— — —	X	fbul	35212	IUKA	60.00	1	60.600
59.400	—-—-—	$	fbul	35219	VINEYARD	60.00	1	60.600

2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2



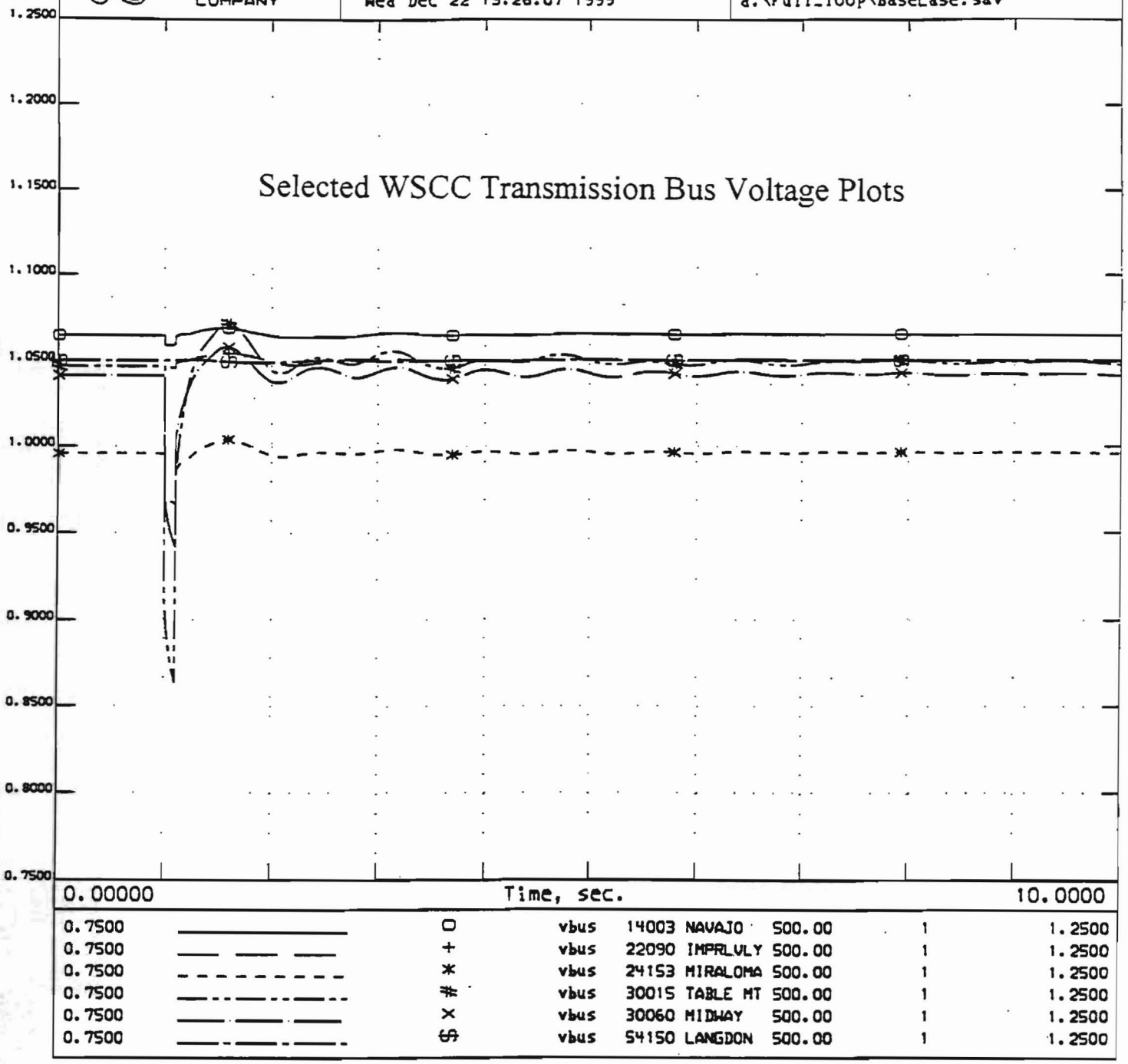
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2

GENERAL ELECTRIC COMPANY

2:WSCC_Bus_Voltages
Wed Dec 22 15:26:07 1999

D:\full_loop\sim5.chf
d:\full_loop\BaseCase.sav



0.7500	———	○	vbus	14003	NAVAJO	500.00	1	1.2500
0.7500	— — —	+	vbus	22090	IMPRLVLY	500.00	1	1.2500
0.7500	- - - - -	*	vbus	24153	MIRALOMA	500.00	1	1.2500
0.7500	—-—-—	#	vbus	30015	TABLE MT	500.00	1	1.2500
0.7500	—.—.—	×	vbus	30060	MIDWAY	500.00	1	1.2500
0.7500	—-—-—	⊗	vbus	54150	LANGDON	500.00	1	1.2500

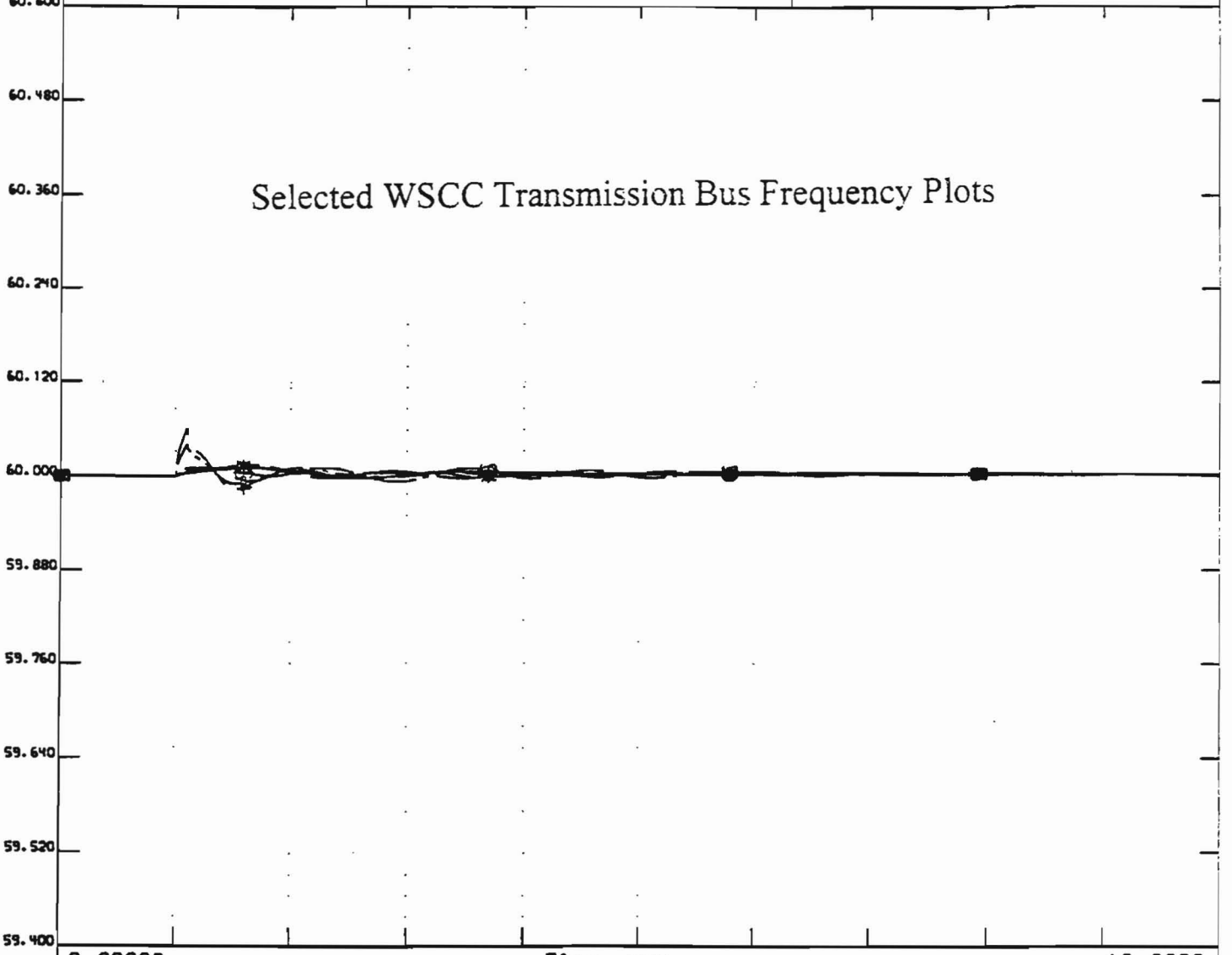
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2

GENERAL ELECTRIC COMPANY

3:WSCC_Bus_Frequency
Wed Dec 22 15:26:08 1999

D:\full_loop\sim5.chf
d:\Full_loop\BaseCase.sav



59.400	———	○	fbus	14001	FOURCORN	500.00	1	60.600
59.400	— — —	+	fbus	40687	MALIN	500.00	1	60.600
59.400	- - - - - - - - -	*	fbus	50662	NIC500	500.00	1	60.600
59.400	—-—-—-—	#	fbus	60240	MIDPOINT	500.00	1	60.600
59.400	—.—.—	×	fbus	62012	TOWN2	500.00	1	60.600
59.400	—-—-—	⊗	fbus	66340	SIGURD	345.00	1	60.600

2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2

GENERAL ELECTRIC COMPANY

4:WSCC_Bus_Frequency
Wed Dec 22 15:26:09 1999

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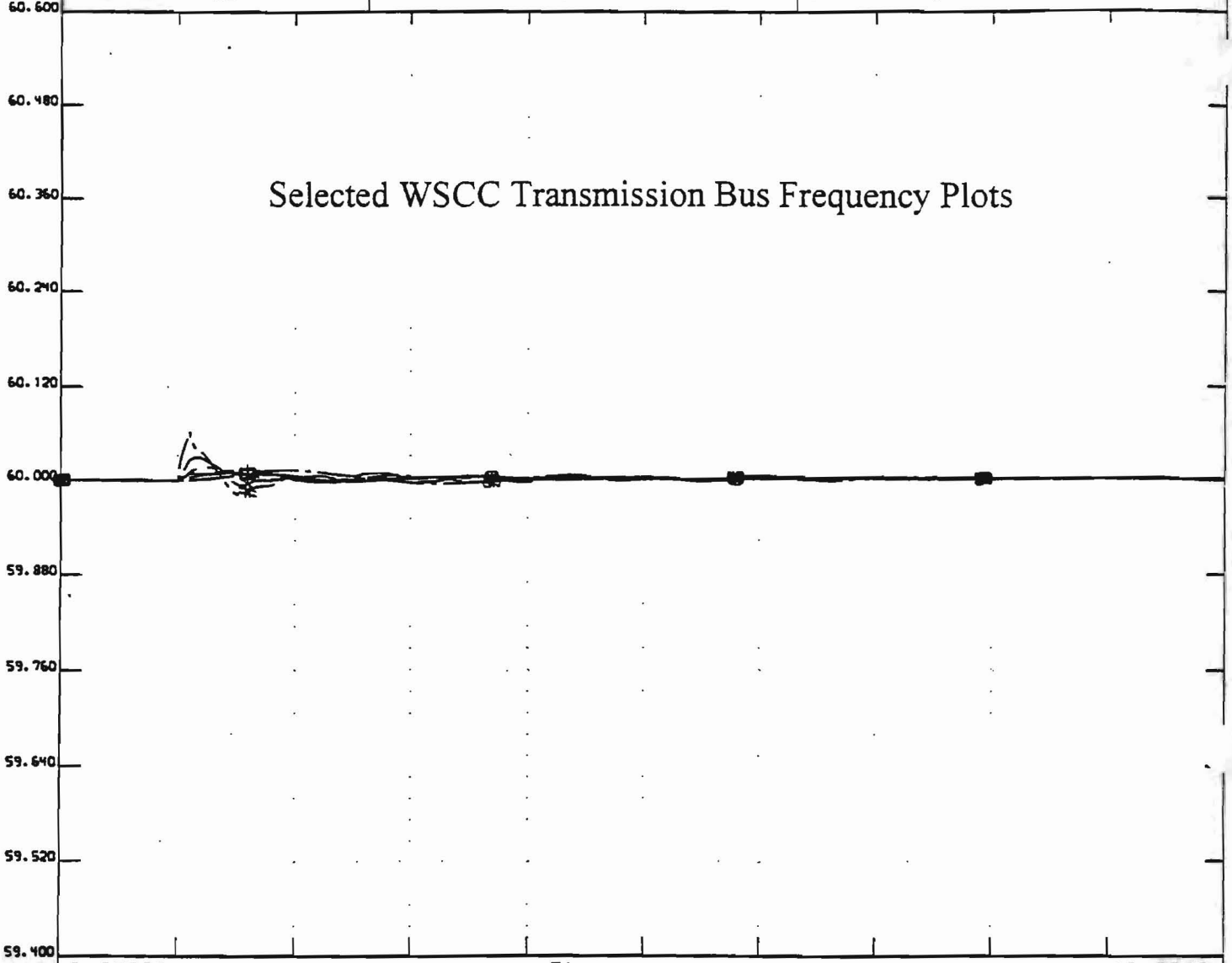
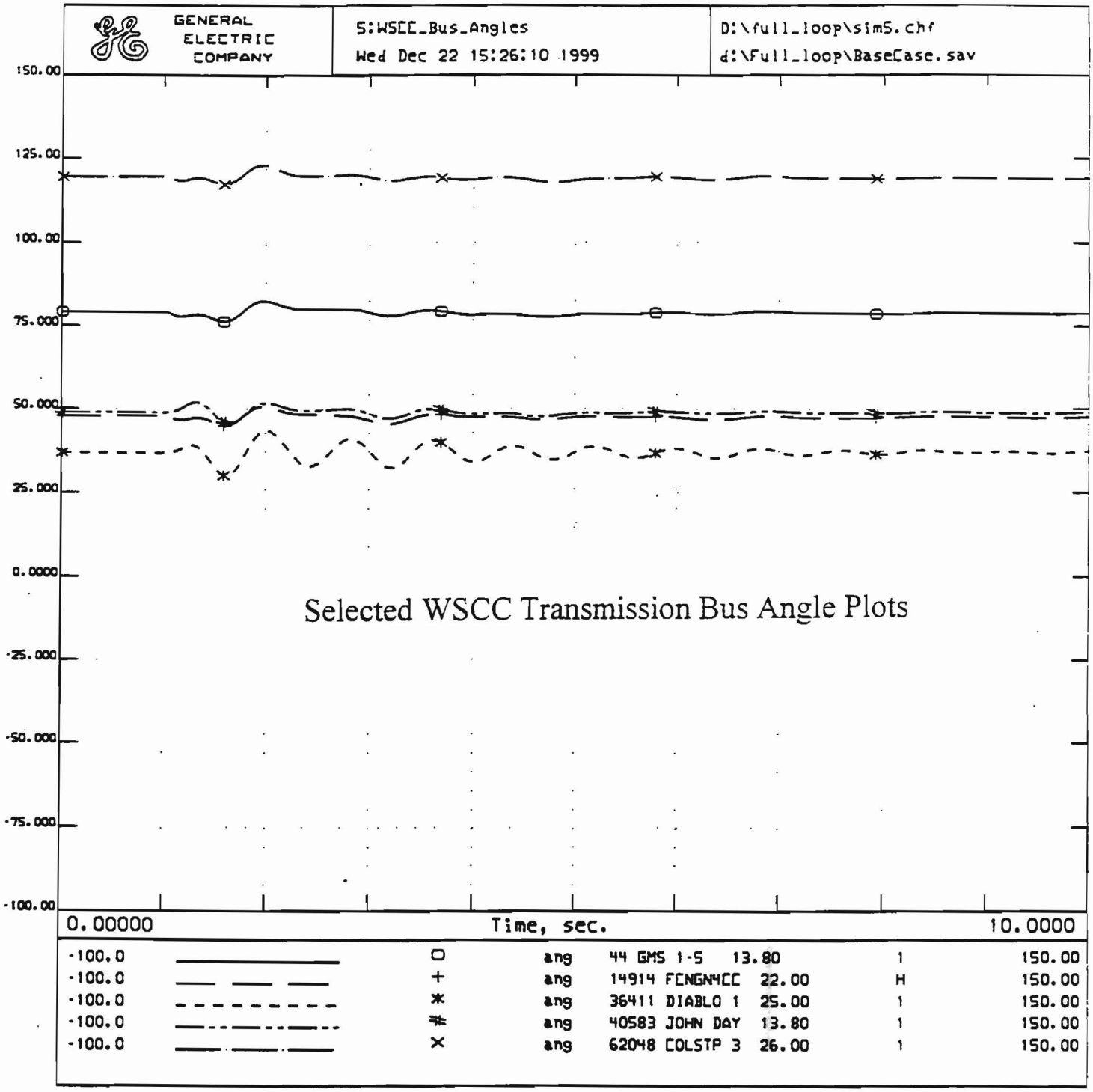


59.400	————	O	fbus	14003 NAVAJO	500.00	1	60.600
59.400	— — —	+	fbus	22090 IMPRLVLY	500.00	1	60.600
59.400	- - - - - - - - -	*	fbus	24153 MIRALOMA	500.00	1	60.600
59.400	—-—-—-—	#	fbus	30015 TABLE MT	500.00	1	60.600
59.400	—.—.—	X	fbus	30060 MIDWAY	500.00	1	60.600
59.400	—-—-—.	$	fbus	54150 LANGDON	500.00	1	60.600

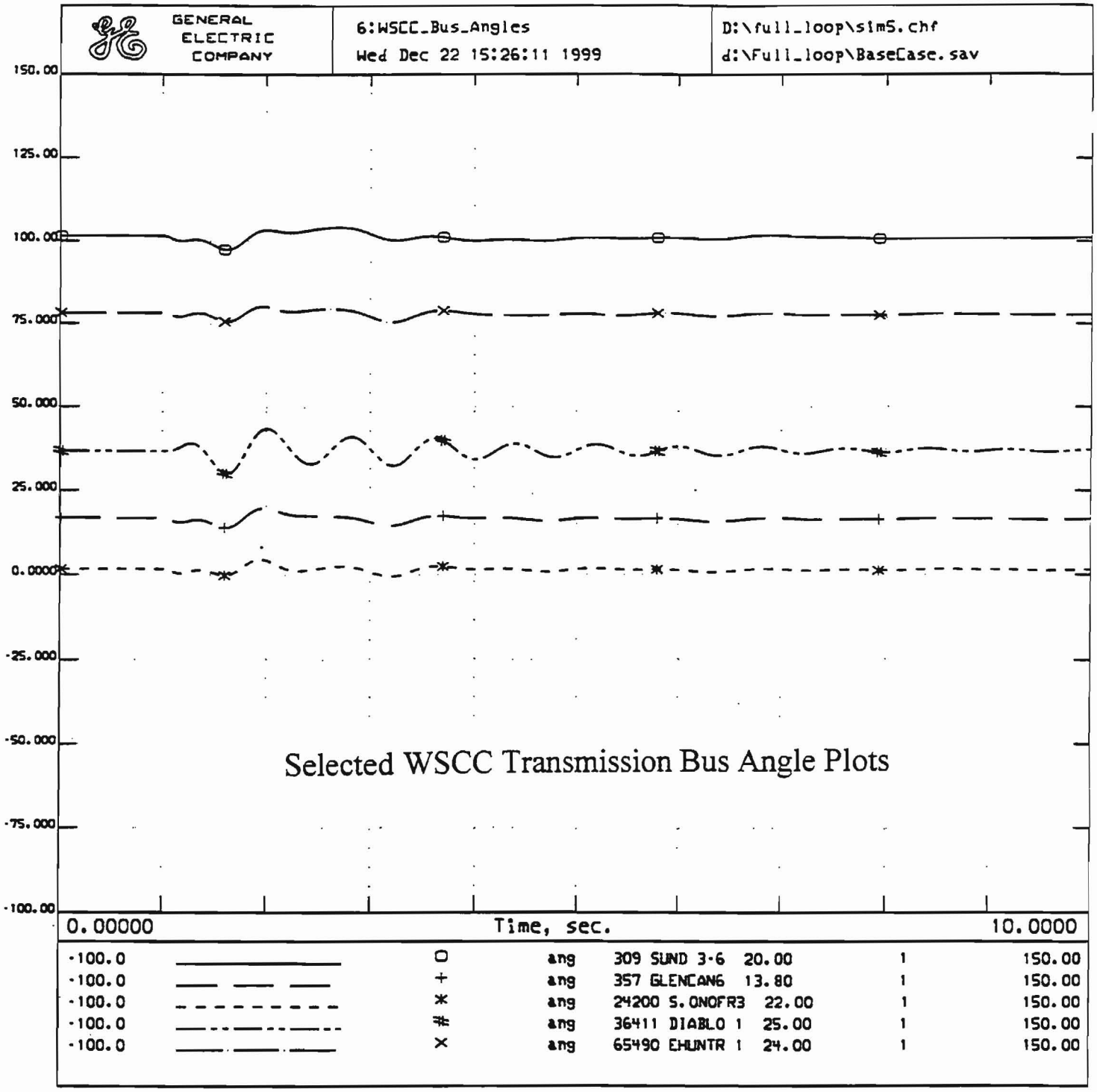
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2



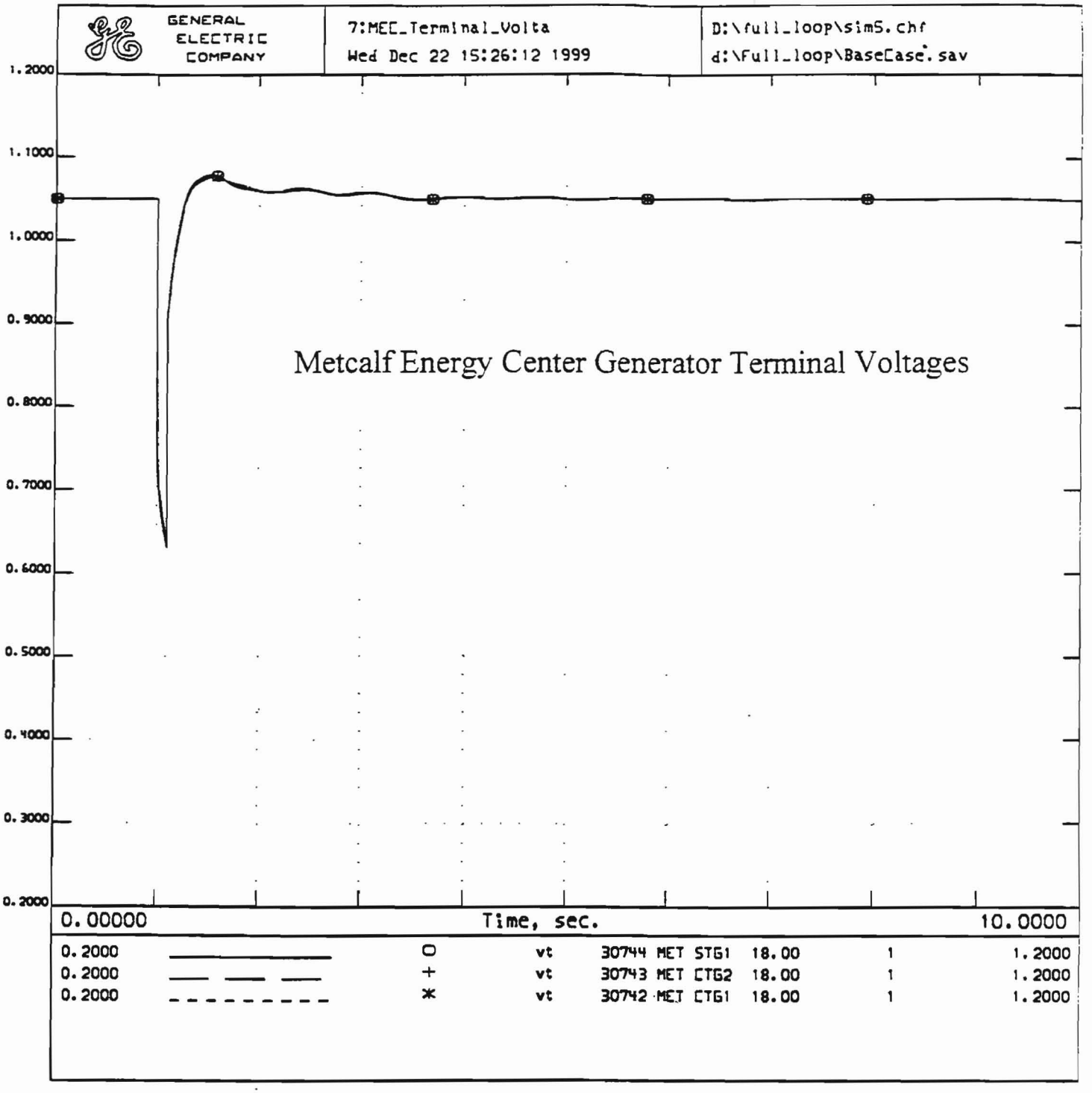
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2



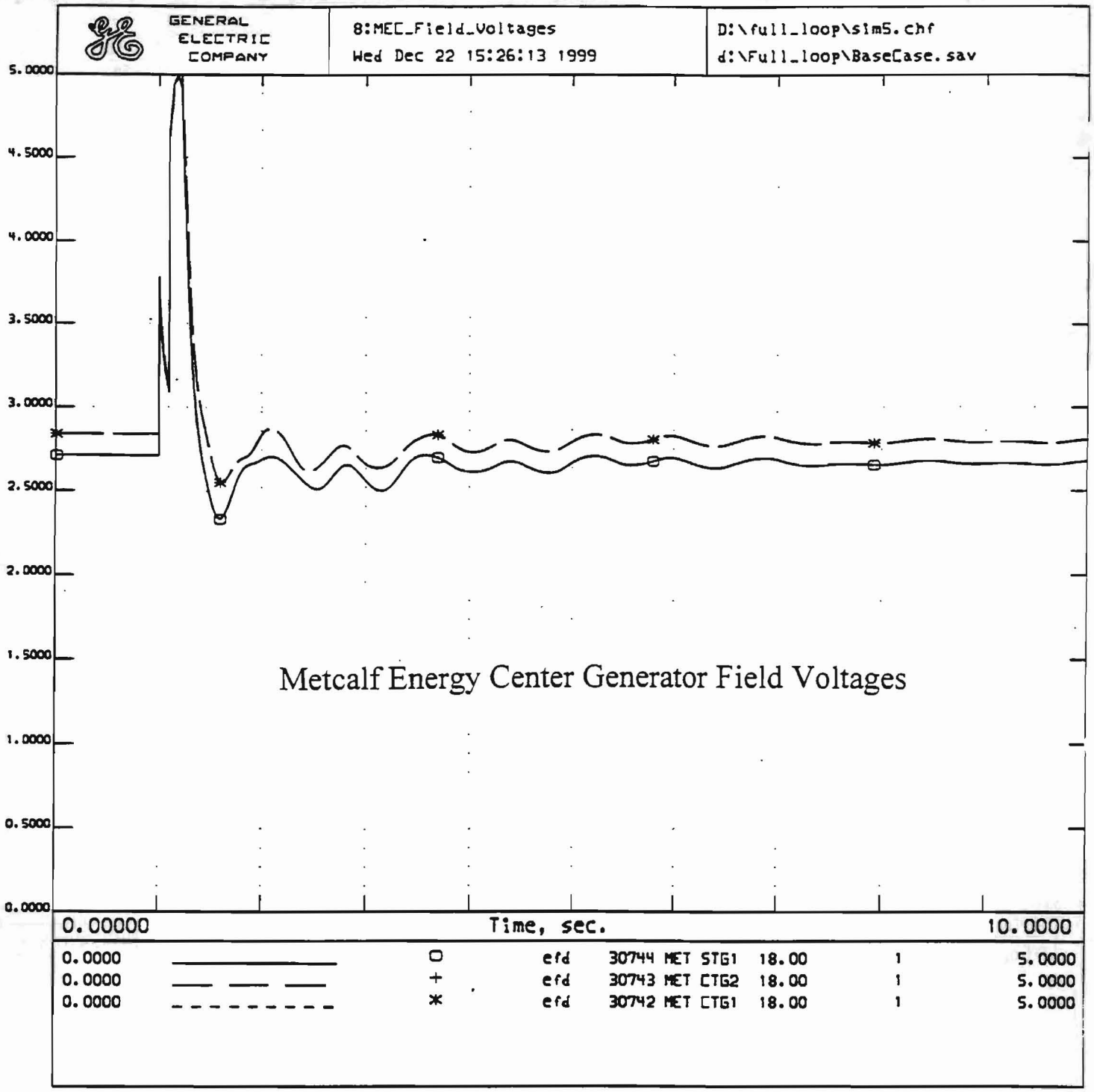
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2



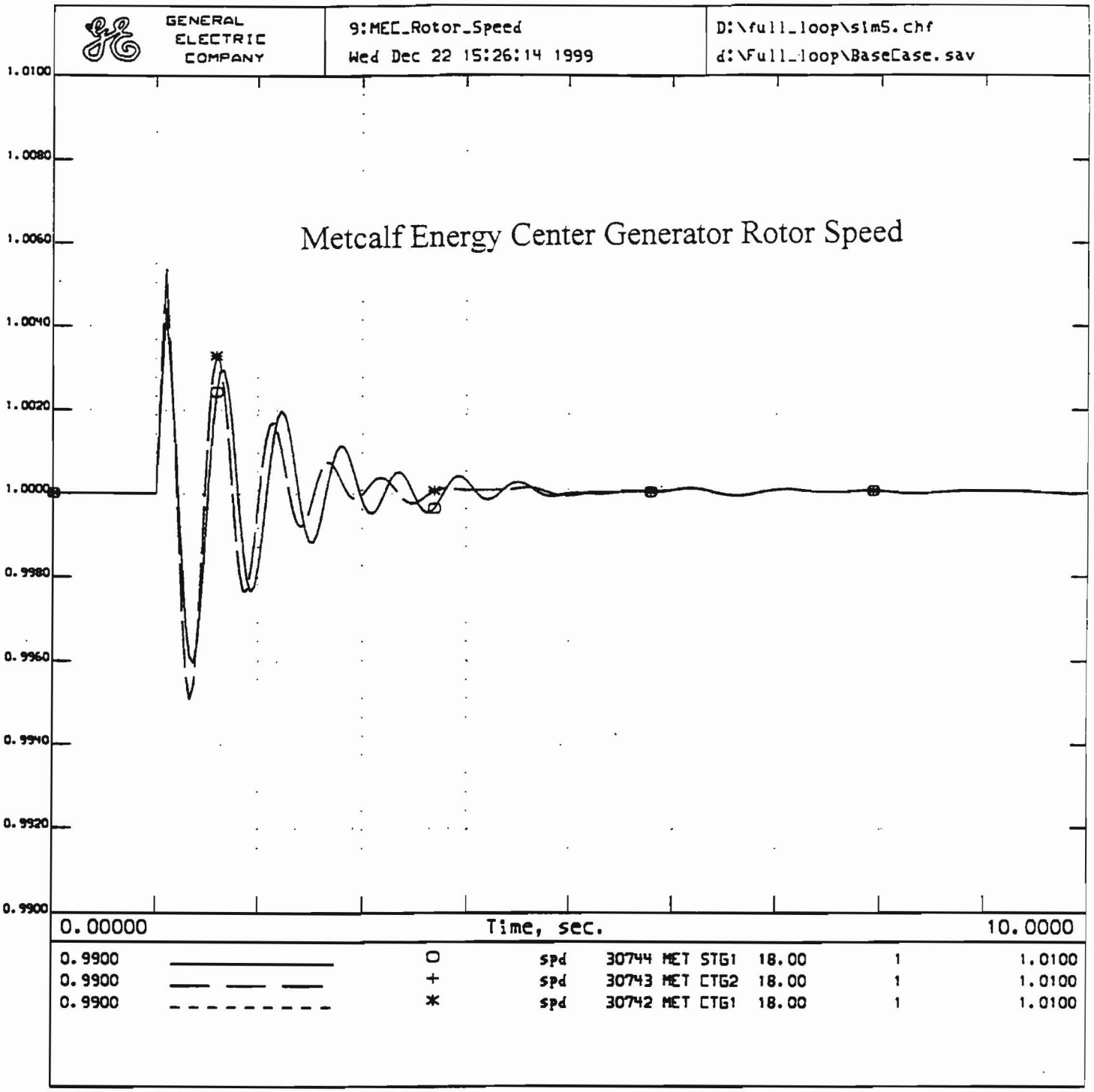
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2



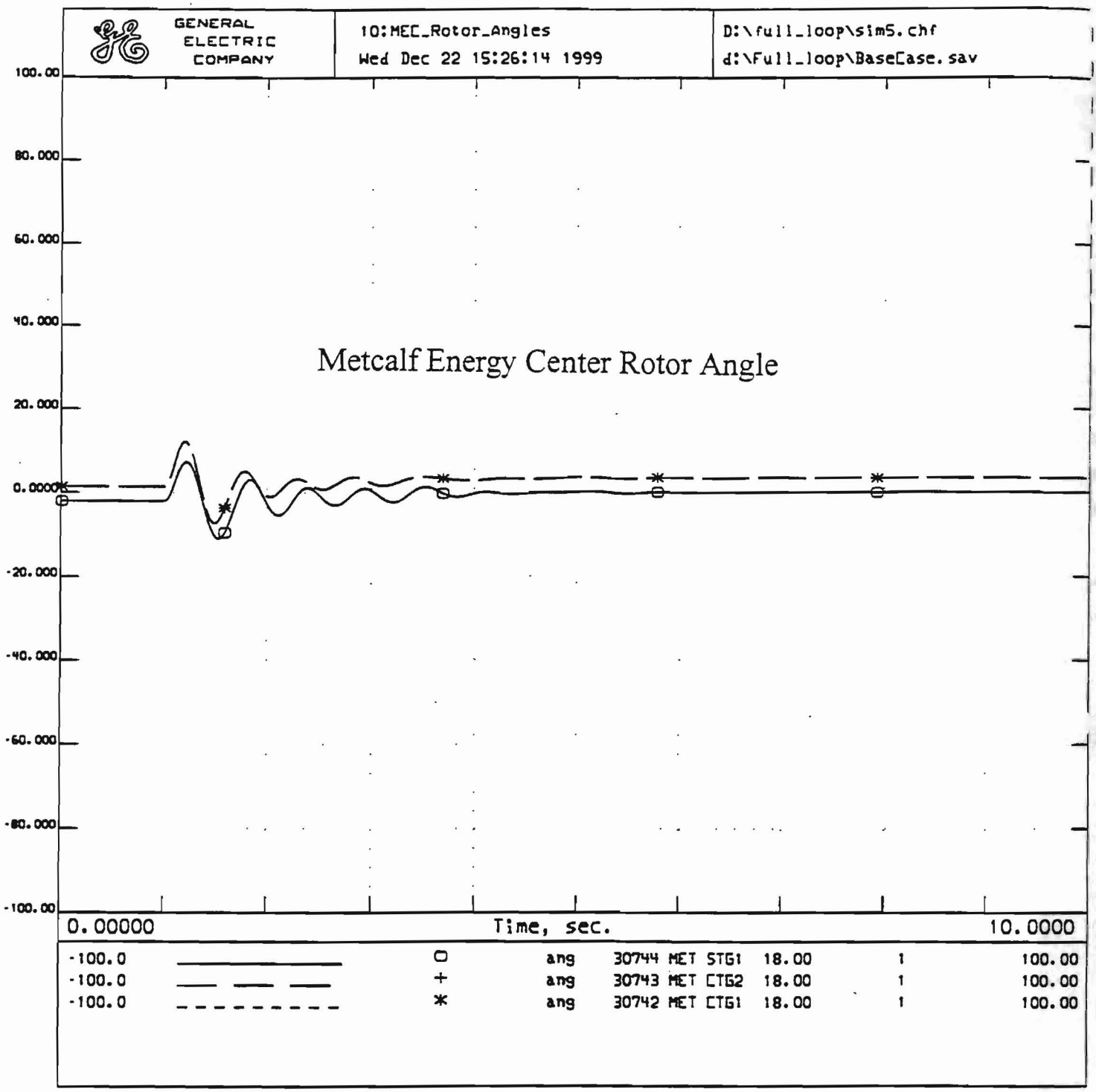
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2



2003 Heavy Summer
MEC Additional Studies

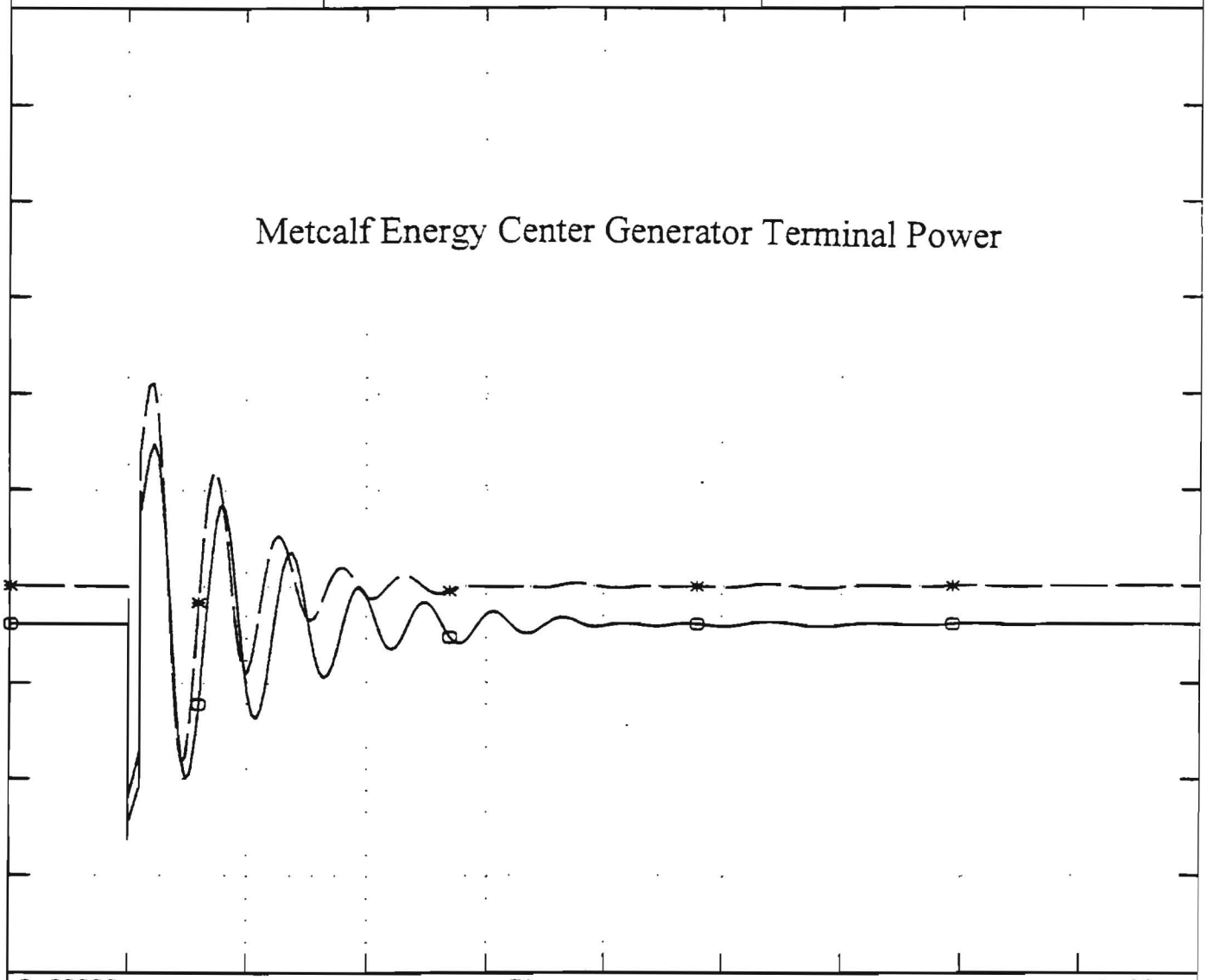
Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2



2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2

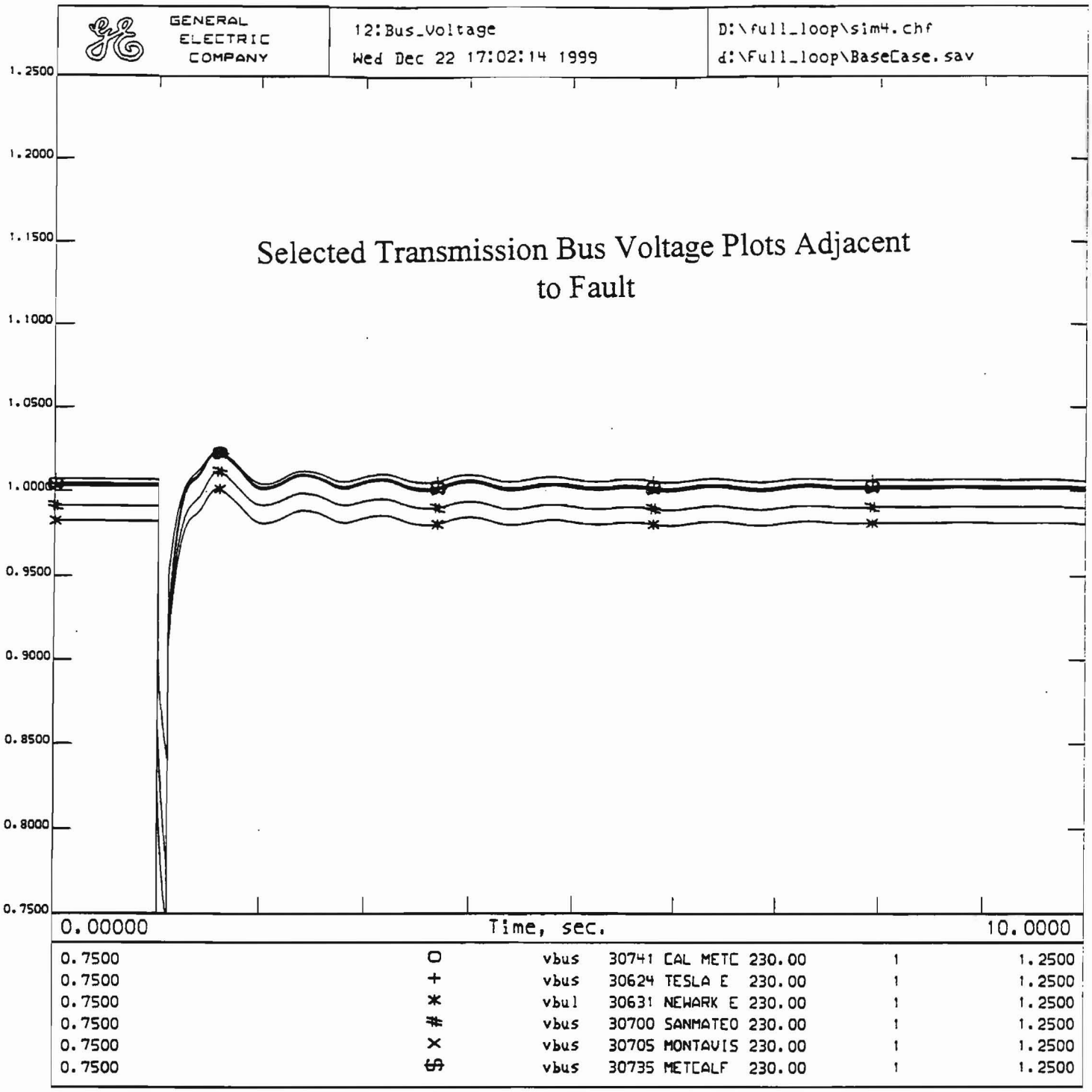
GENERAL ELECTRIC COMPANY	11:MEC_Terminal_Powe Wed Dec 22 15:26:15 1999	D:\full_loop\simS.chf d:\Full_loop\BaseCase.sav



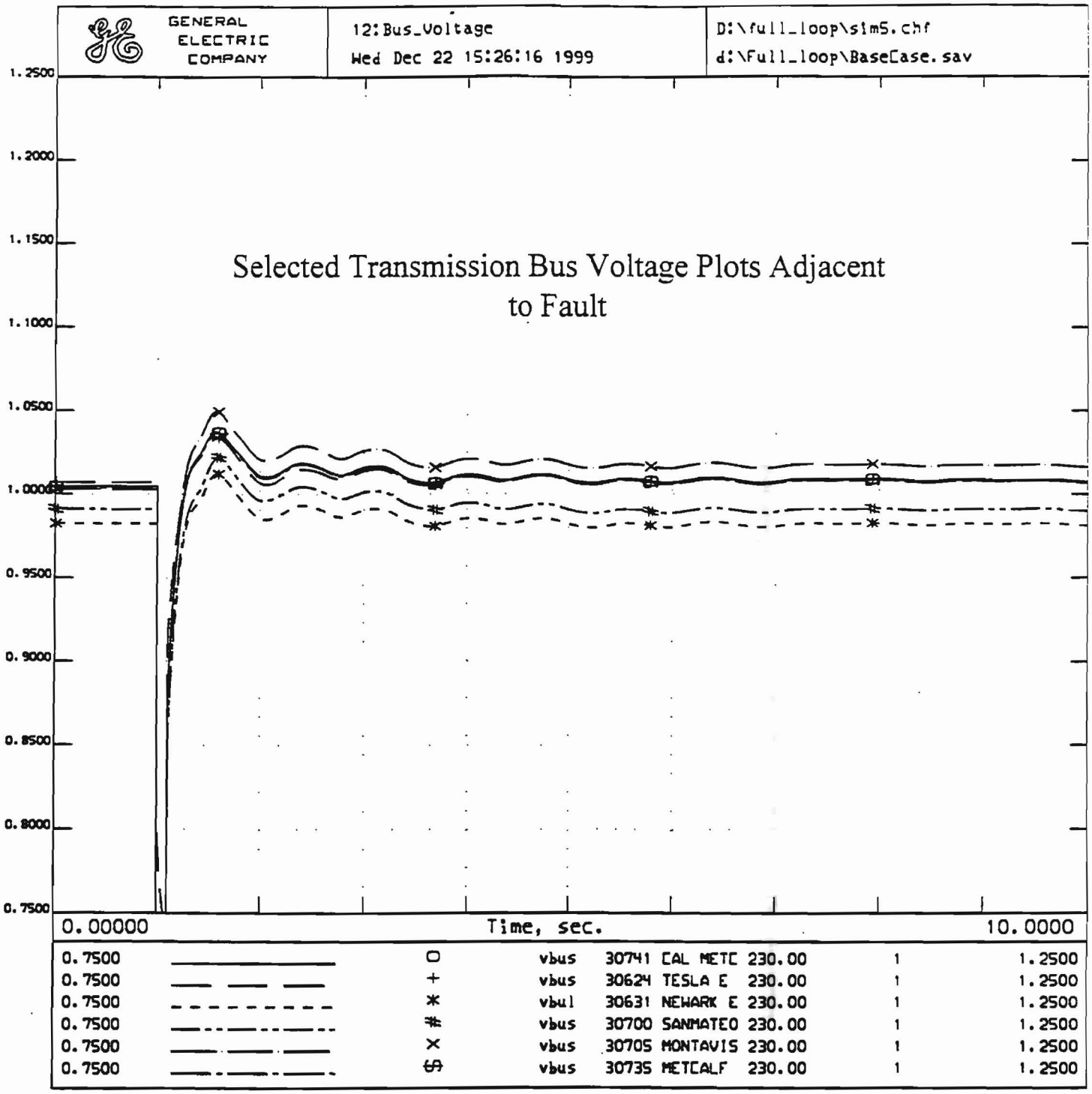
0.0000	———	o	PG	30744	MET STG1	18.00	1	554.00
0.0000	— — —	+	PG	30743	MET CTG2	18.00	1	500.00
0.0000	- - - - - - - - -	*	PG	30742	MET CTG1	18.00	1	500.00

2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2



2003 Heavy Summer
MEC Additional Studies
(N-2): Double Circuit Tower lines Outage.
Moss Landing-Green Valley 115 kV double circuit outage.
Three-phase fault at Moss Landing 115 kV bus with normal clearing.



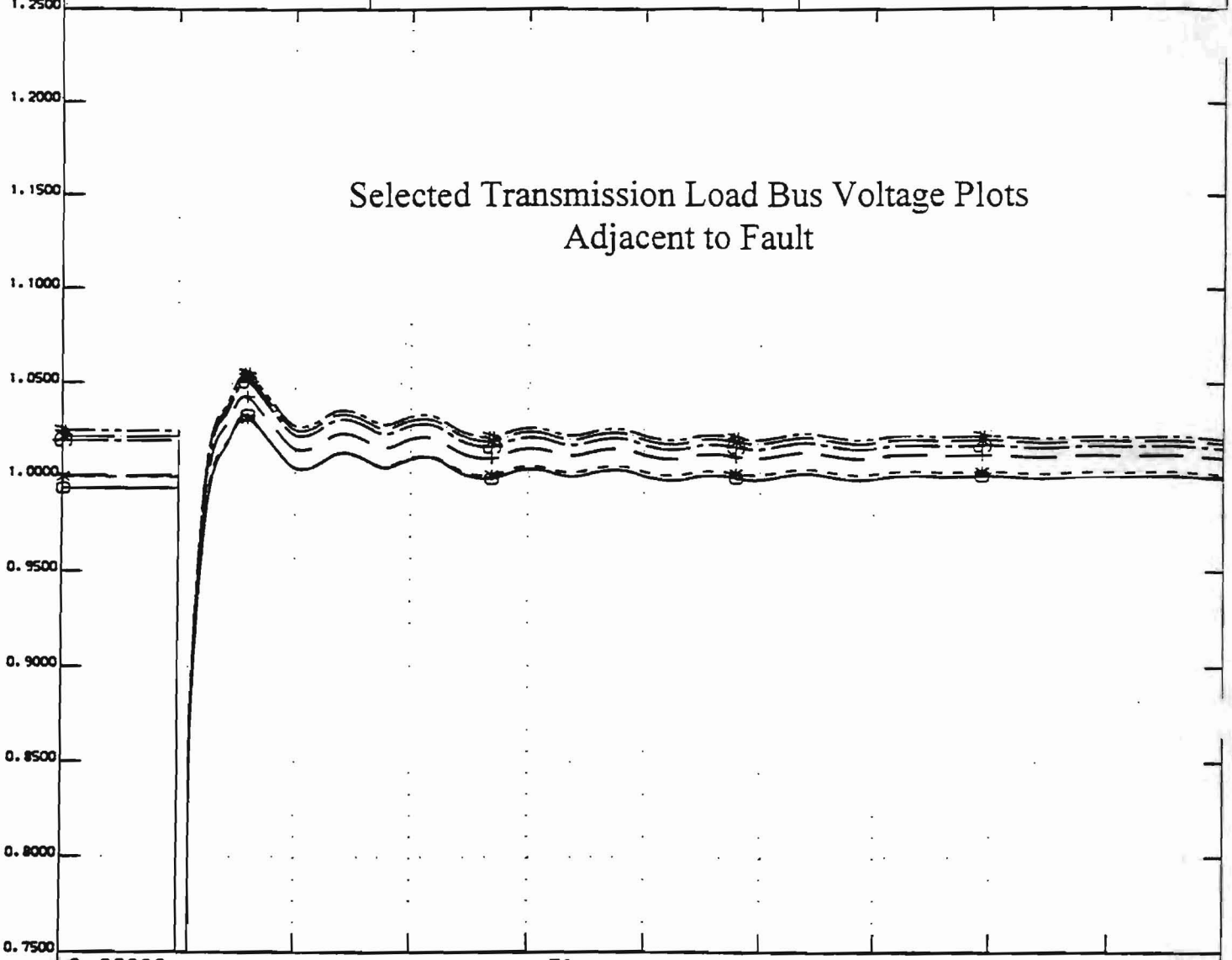
2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2

GENERAL ELECTRIC COMPANY

13:Load_Bus_Voltages
Wed Dec 22 15:26:17 1999

D:\full_loop\sim5.chf
d:\full_loop\BaseCase.sav



0.7500	———	o	vbul	30711 S.L.A.C. 230.00	1	1.2500
0.7500	— — —	+	vbul	30720 SARATOGA 230.00	1	1.2500
0.7500	- - - - - - - - -	*	vbul	30730 HICKS 230.00	1	1.2500
0.7500	—-—-—-—	#	vbul	35353 MT VIEW 115.00	1	1.2500
0.7500	—.—.—	x	vbul	35362 LOCKHD 2 115.00	1	1.2500
0.7500	—-—-—	⊗	vbul	35368 BRITTONP 115.00	1	1.2500

2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2

GENERAL ELECTRIC COMPANY

14:Load_Frequency
Wed Dec 22 15:26:18 1999

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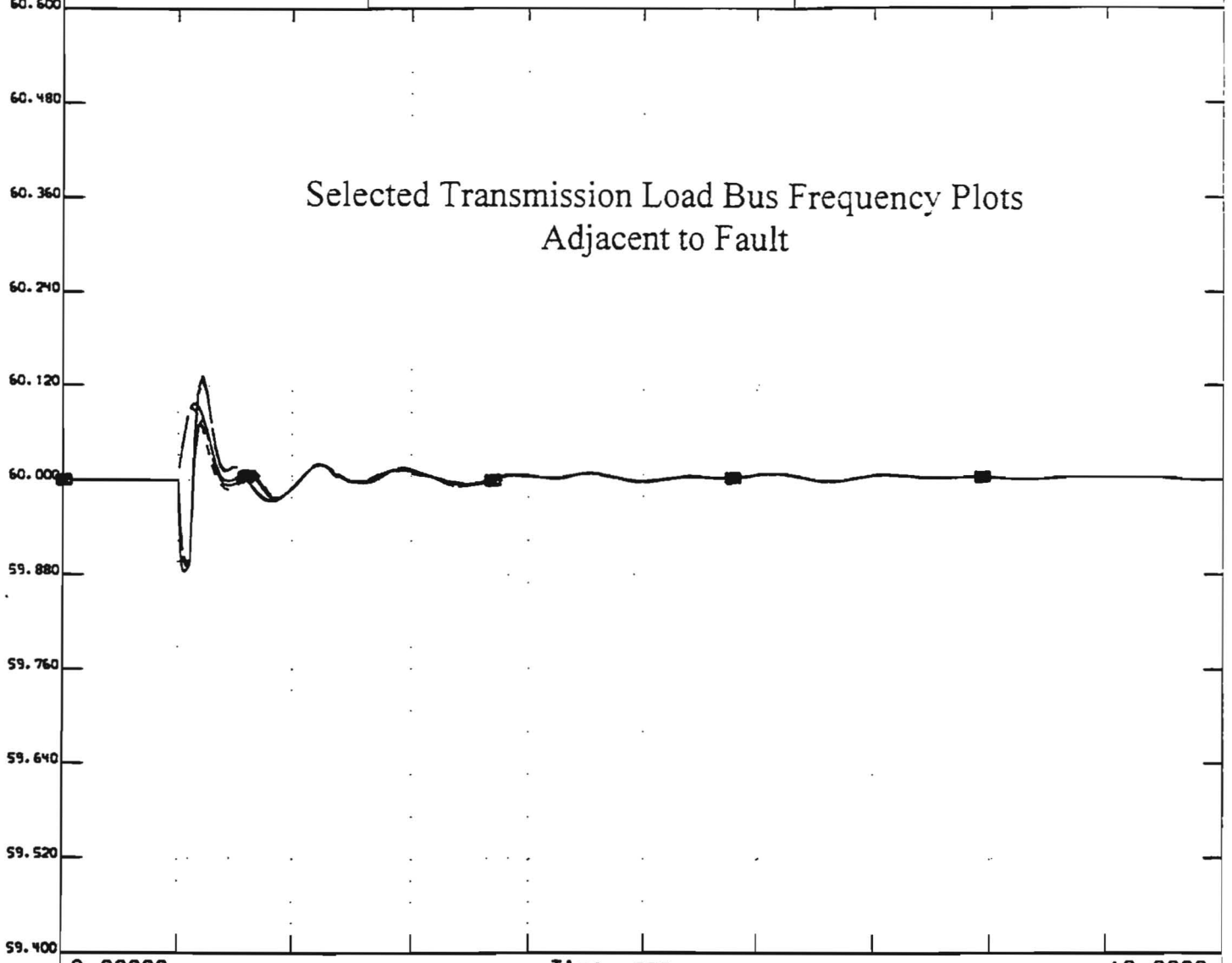


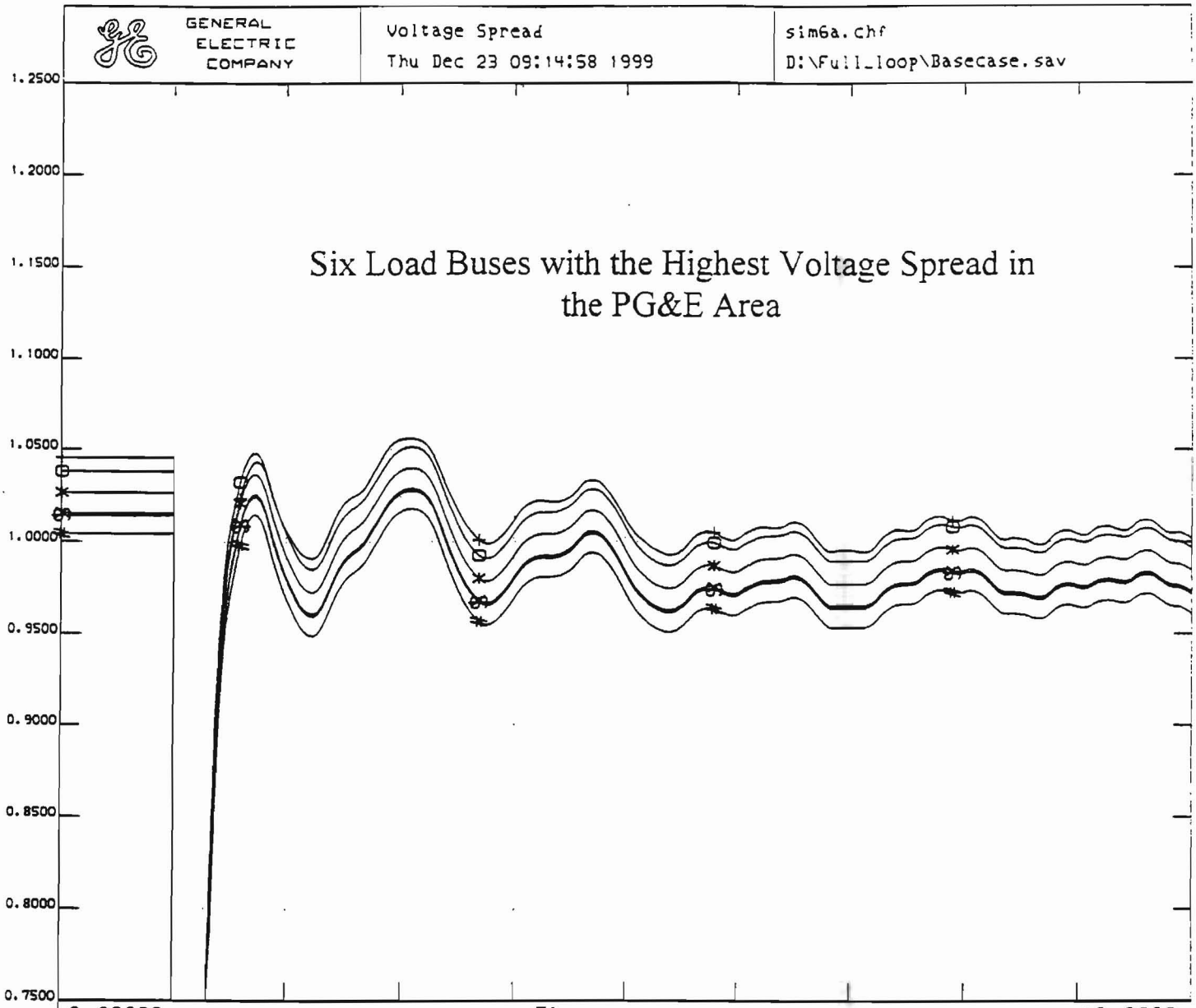
59.400	———	○	fbul	30711	S.L.A.C. 230.00	1	60.600
59.400	— — —	+	fbul	30720	SARATOGA 230.00	1	60.600
59.400	- - - - - - - - -	*	fbul	30730	HICKS 230.00	1	60.600
59.400	—··—··—··—	#	fbul	35353	MT VIEW 115.00	1	60.600
59.400	—·—·—·—	×	fbul	35362	LOCKHD 2 115.00	1	60.600
59.400	—·—·—·—	⊕	fbul	35368	BRITTONP 115.00	1	60.600

2003 Heavy Summer
MEC Additional Studies

Bus section outage with normal clearing:
Monta Vista 230 kV Bus #2

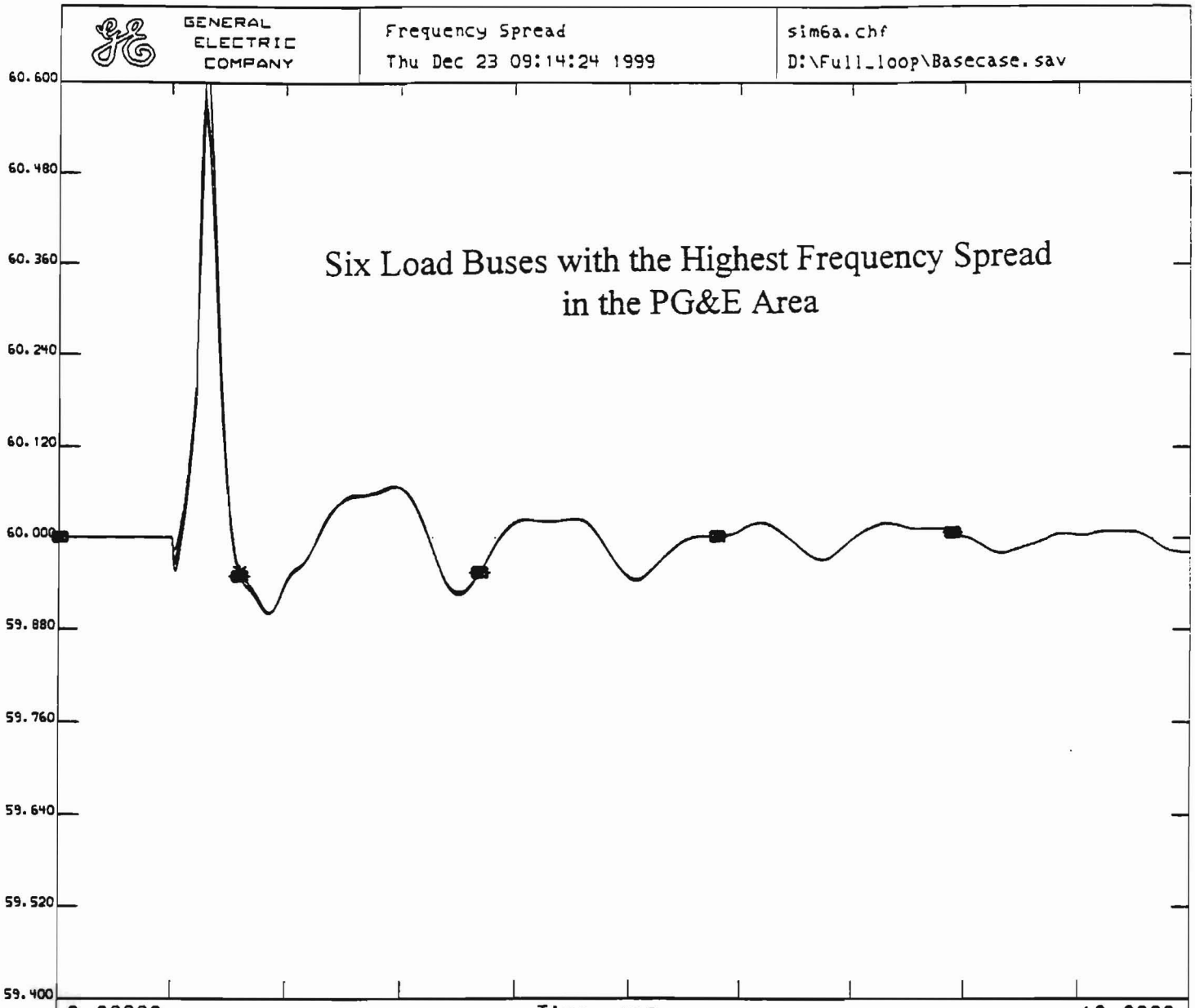
Attachment 7f:
Stability Plots
for

Loss of the Newark Bus Section D with a circuit breaker (CB 200) failure due to a fault (Level D disturbance)



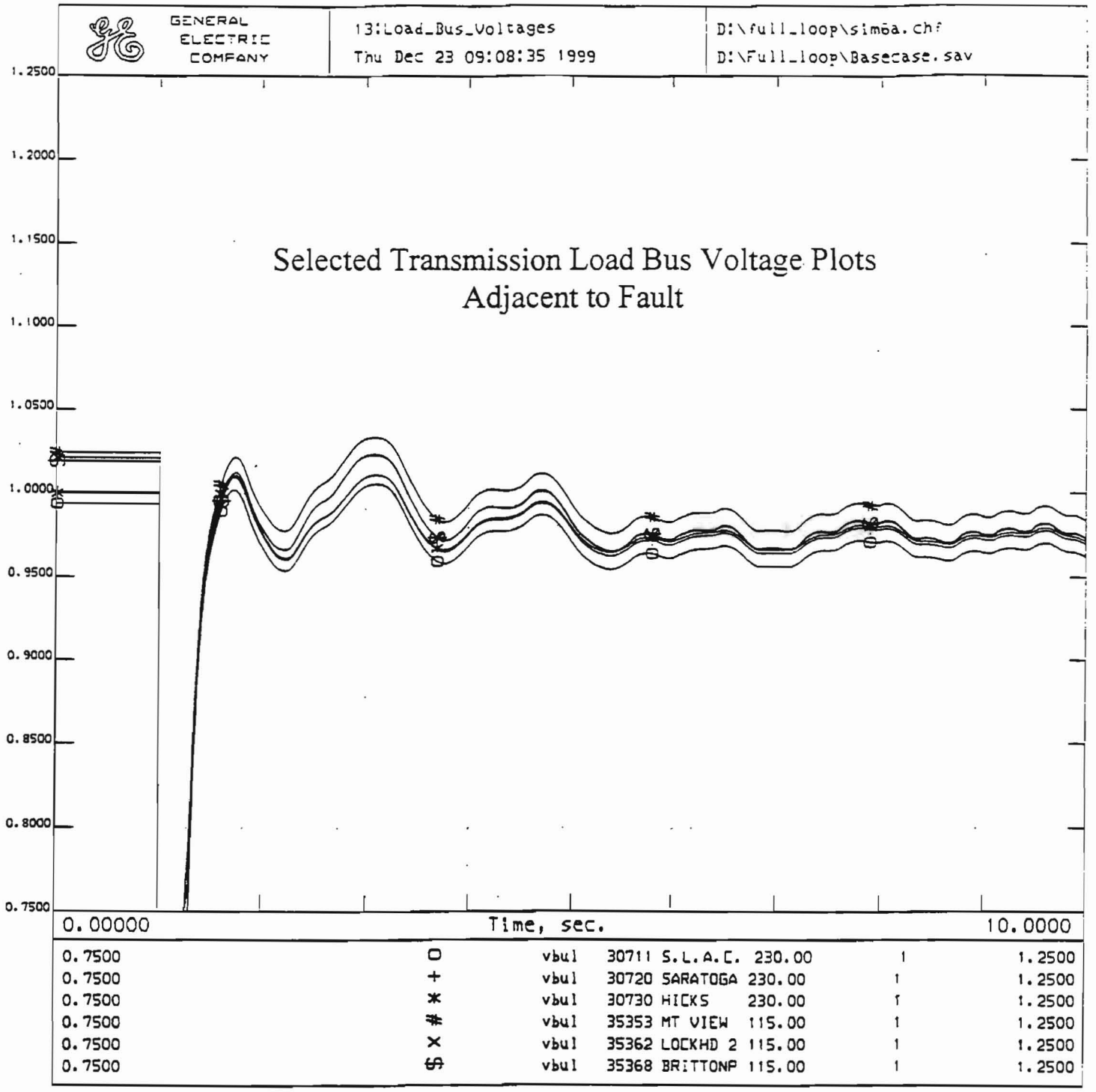
0.7500	□	vbul	35450	LOS ALTS	60.00	1	1.2500
0.7500	+	vbul	35757	ALMADEN	60.00	1	1.2500
0.7500	*	vbul	36000	BIG BASN	60.00	1	1.2500
0.7500	#	vbul	36004	LONE STR	60.00	1	1.2500
0.7500	×	vbul	36006	PT MRTTI	60.00	1	1.2500
0.7500	⊗	vbul	36007	CRUSHER	60.00	1	1.2500

2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)

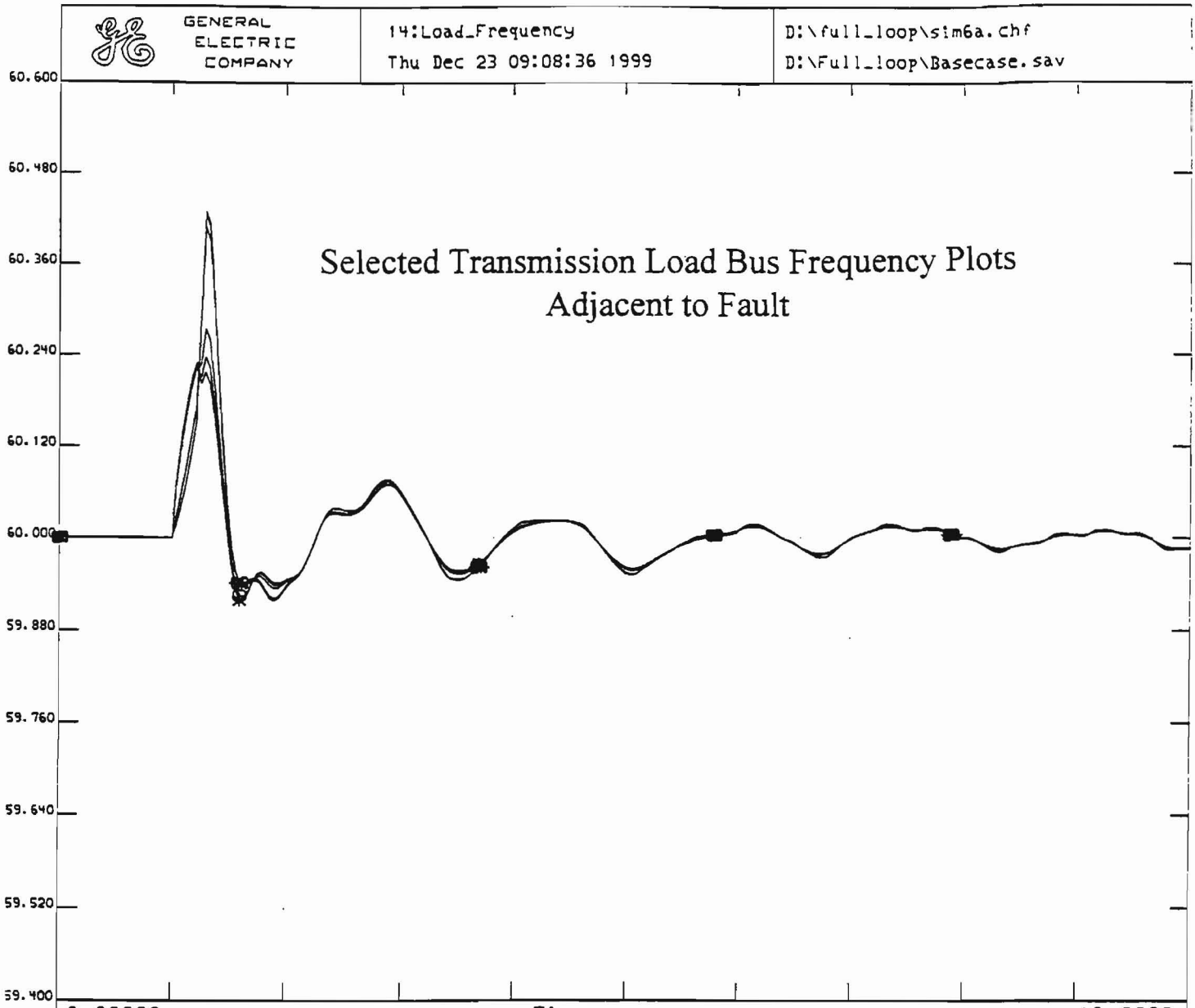


59.400	O	fbul	33251	EMBRCDR2	34.50	1	60.600
59.400	+	fbul	33256	EMBRCDR1	12.00	1	60.600
59.400	*	fbul	33257	EMBRCDR2	12.00	1	60.600
59.400	#	fbul	33262	POTRER01	12.00	1	60.600
59.400	X	fbul	33263	POTRER02	12.00	1	60.600
59.400	$	fbul	33265	MRTN ABG	12.00	1	60.600

2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
DS - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)

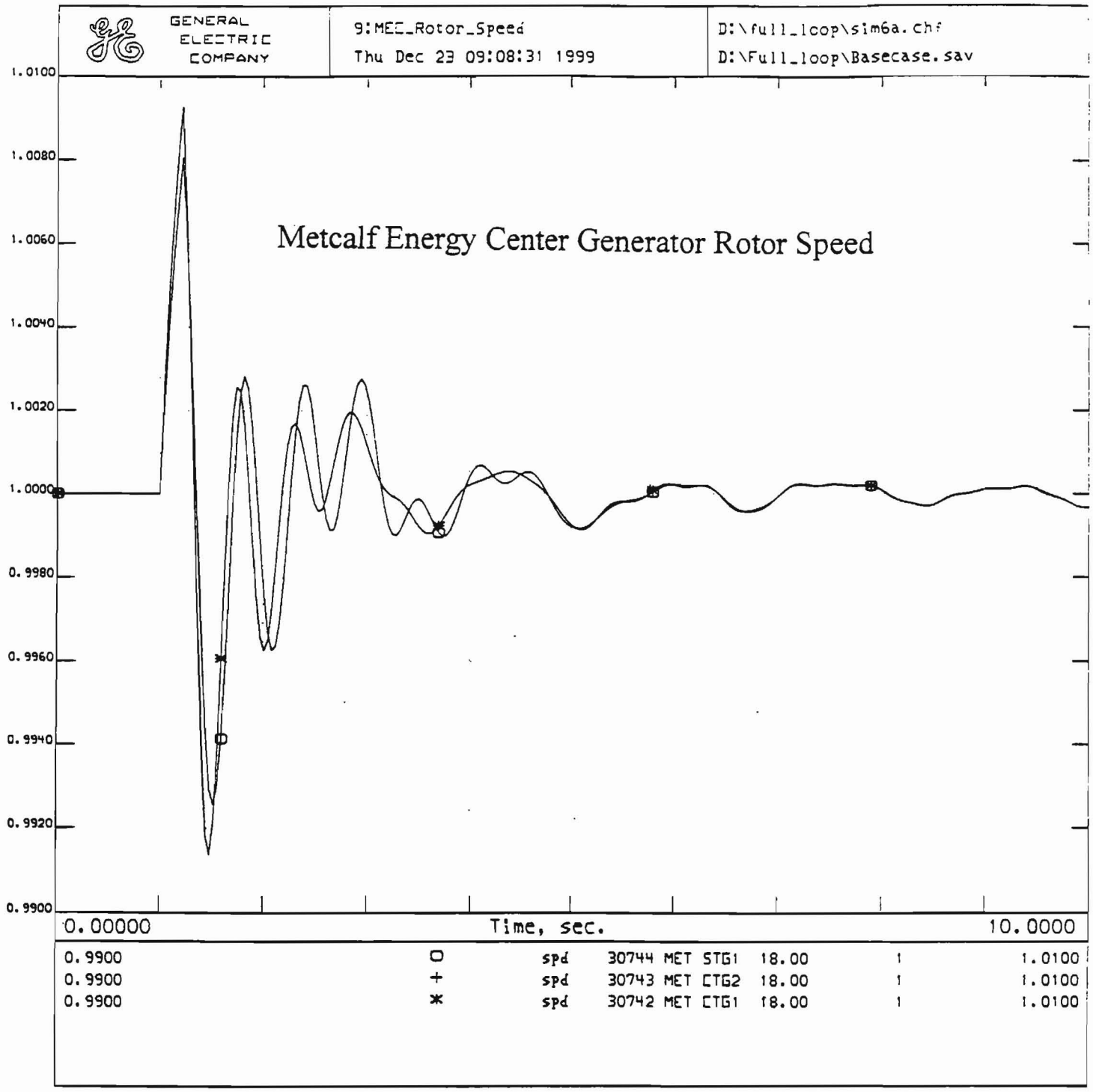


2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)

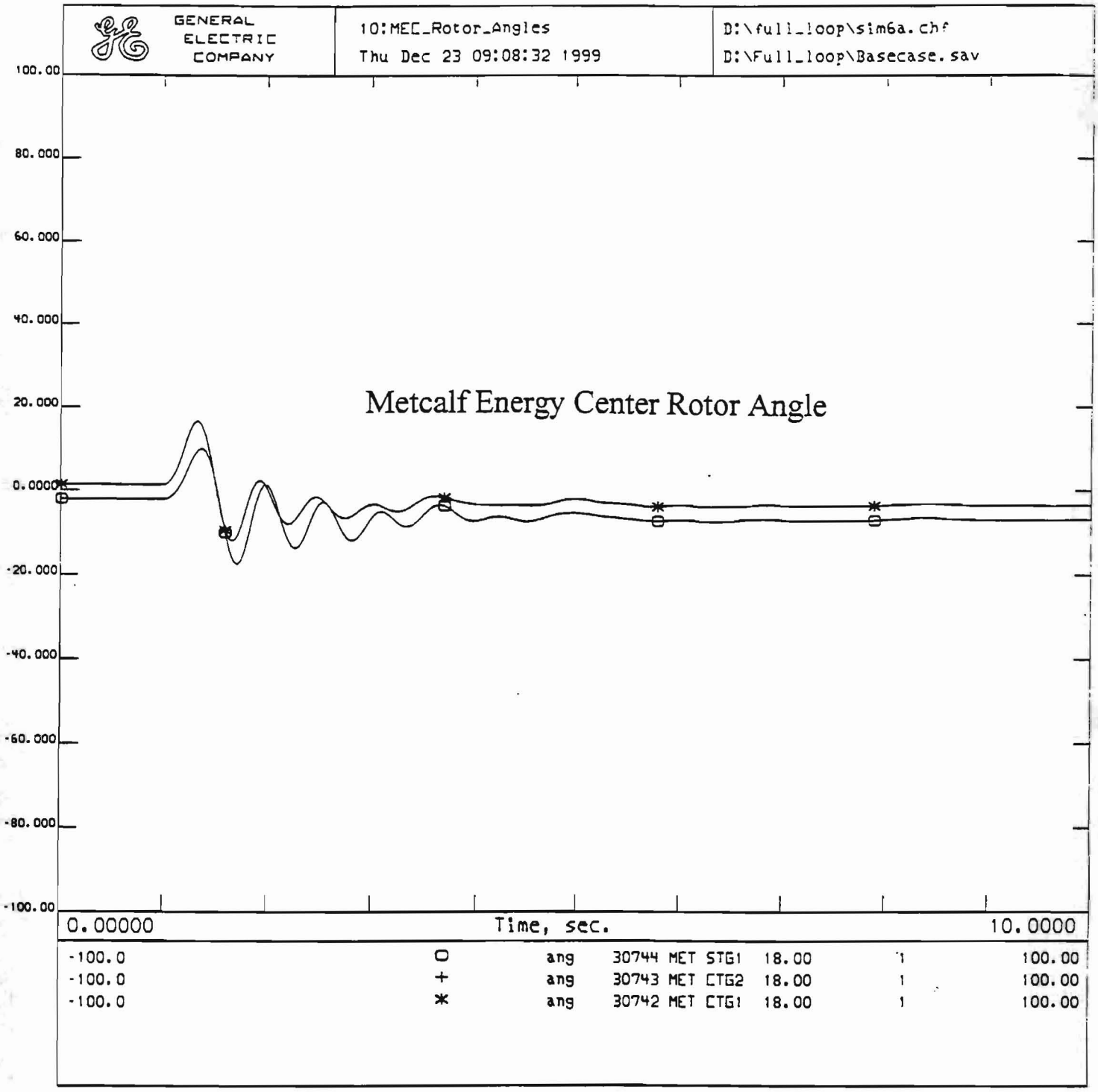


59.400	○	fbul	30711	S.L.A.C. 230.00	1	60.600
59.400	+	fbul	30720	SARATOGA 230.00	1	60.600
59.400	*	fbul	30730	HICKS 230.00	1	60.600
59.400	#	fbul	35353	MT VIEW 115.00	1	60.600
59.400	×	fbul	35362	LOCKHD 2 115.00	1	60.600
59.400	⊗	fbul	35368	BRITTONP 115.00	1	60.600

2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)

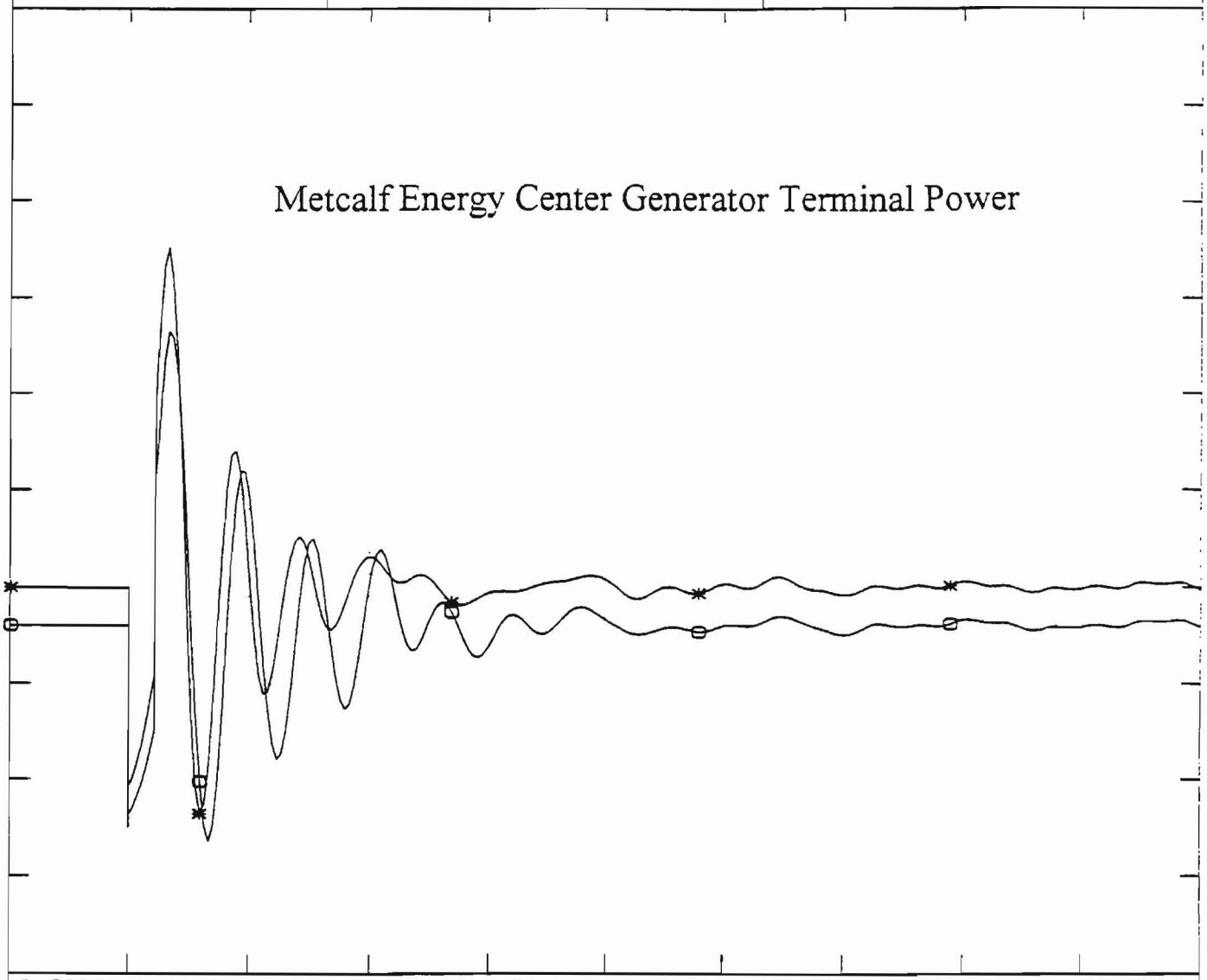


2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)



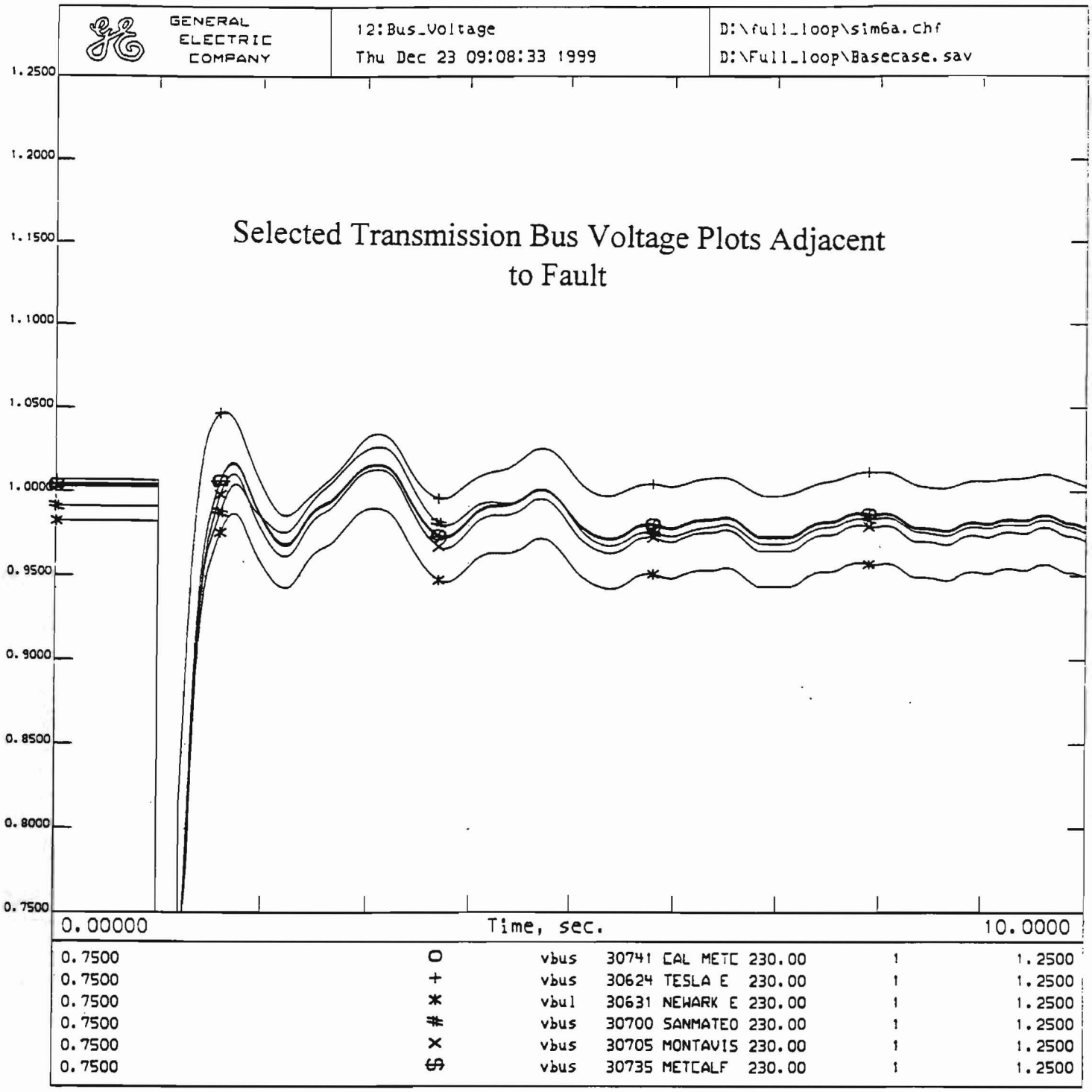
2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)

GENERAL ELECTRIC COMPANY	11:MEC_Terminal_Powe Thu Dec 23 09:08:33 1999	D:\full_loop\sim6a.chf D:\Full_loop\Basecase.sav

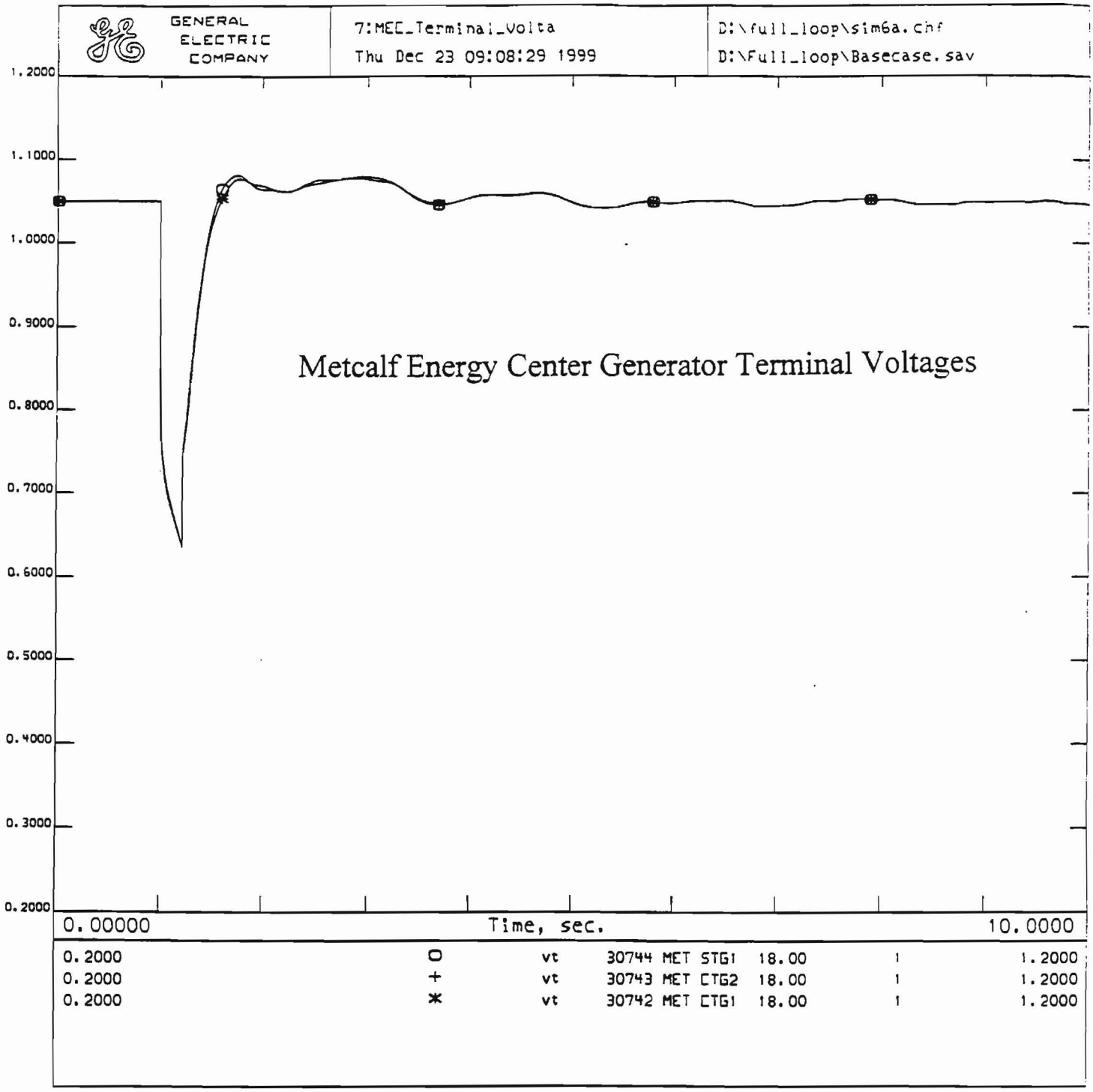


0.0000	o	PG	30744 MET STG1	18.00	1	554.00
0.0000	+	PG	30743 MET CTG2	18.00	1	500.00
0.0000	*	PG	30742 MET CTG1	18.00	1	500.00

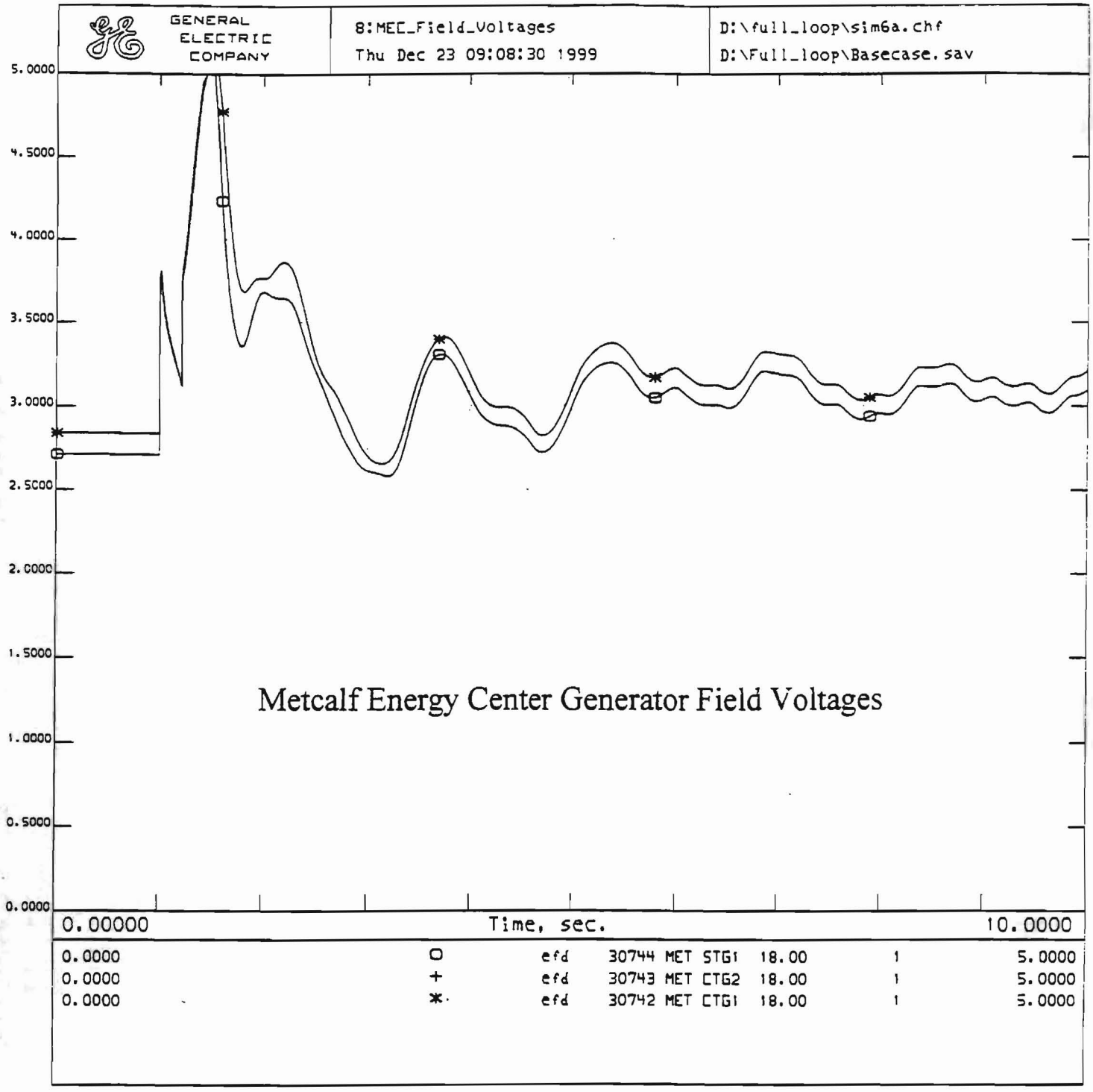
2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)



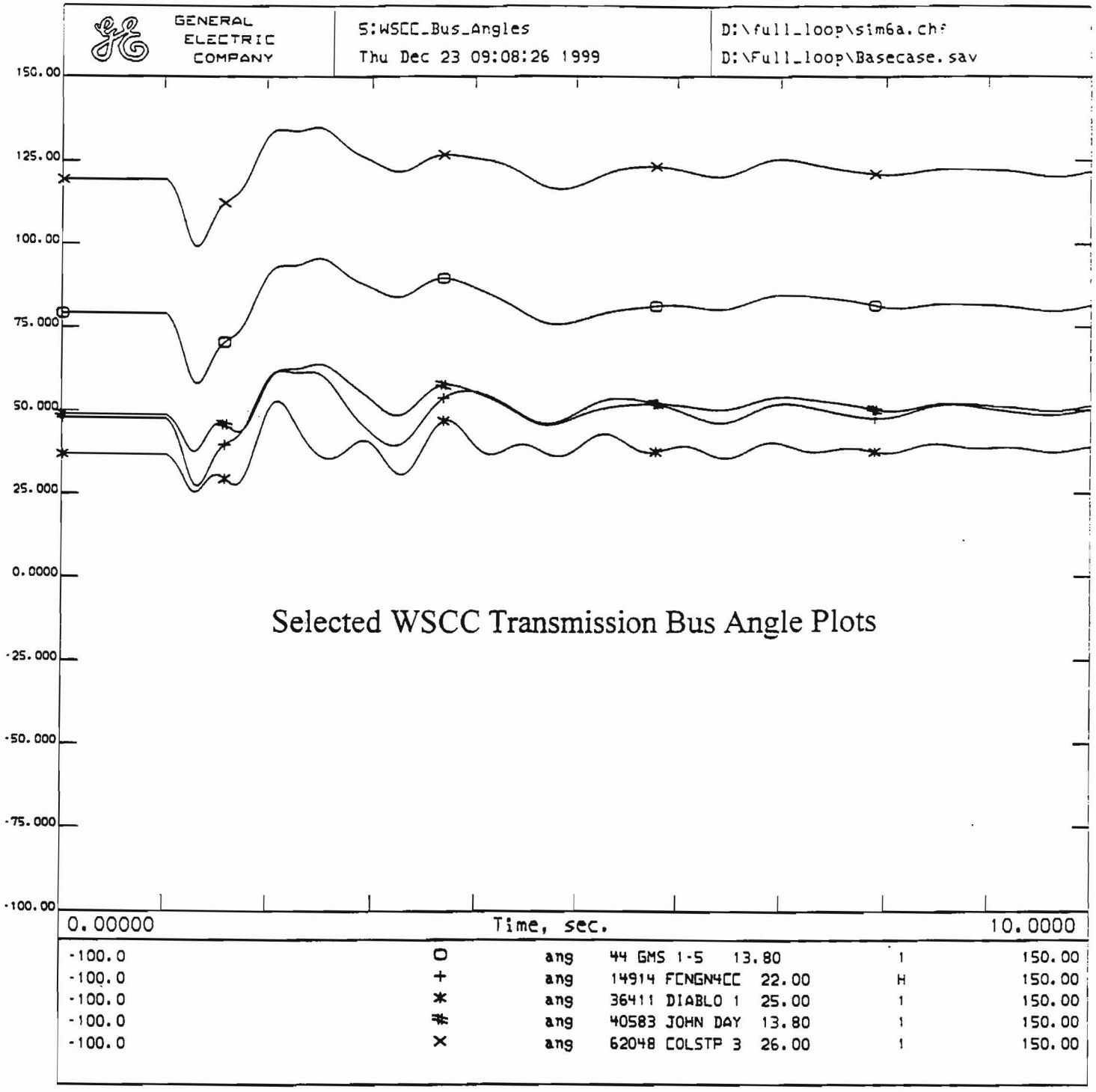
2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)



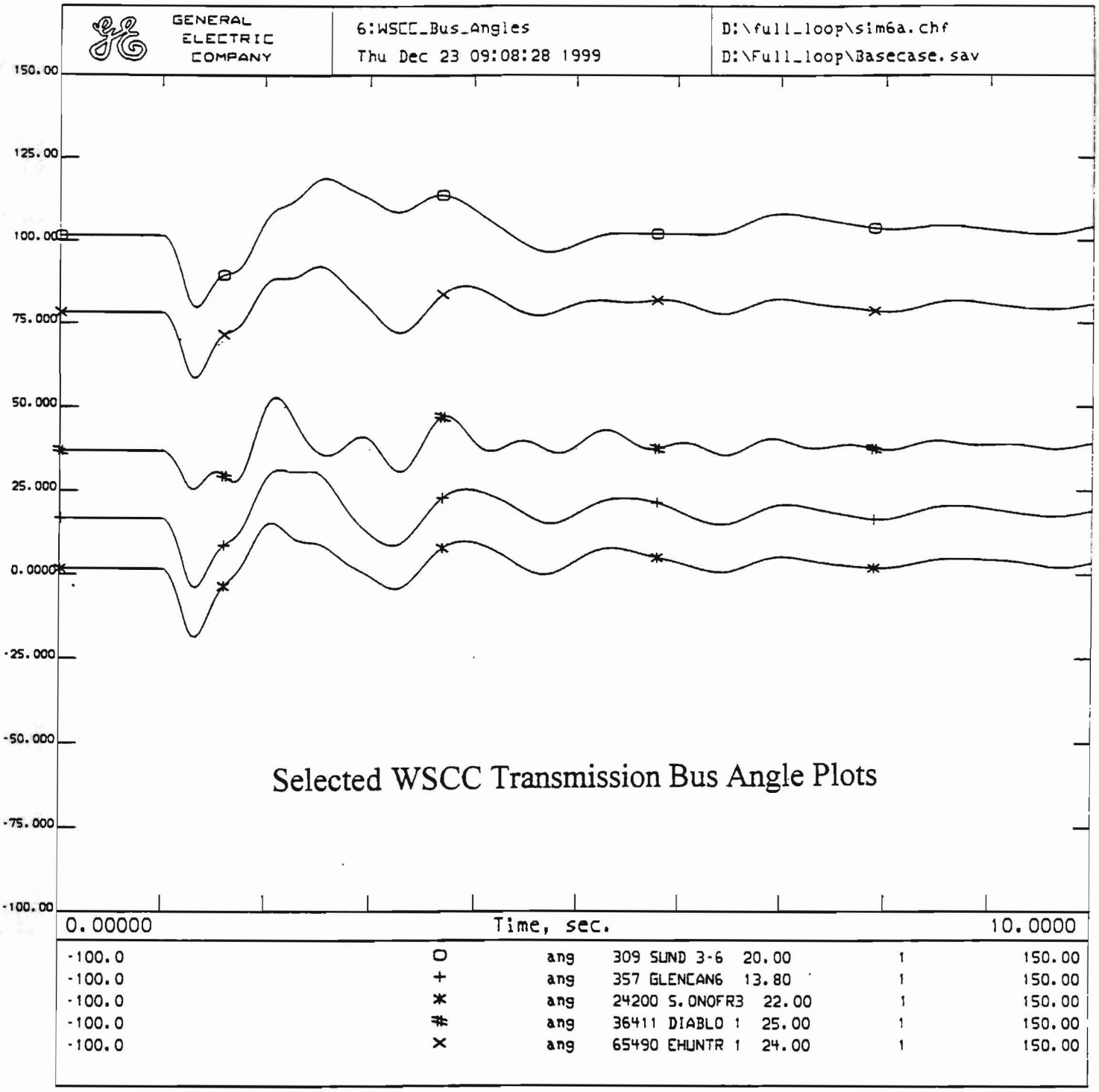
2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)



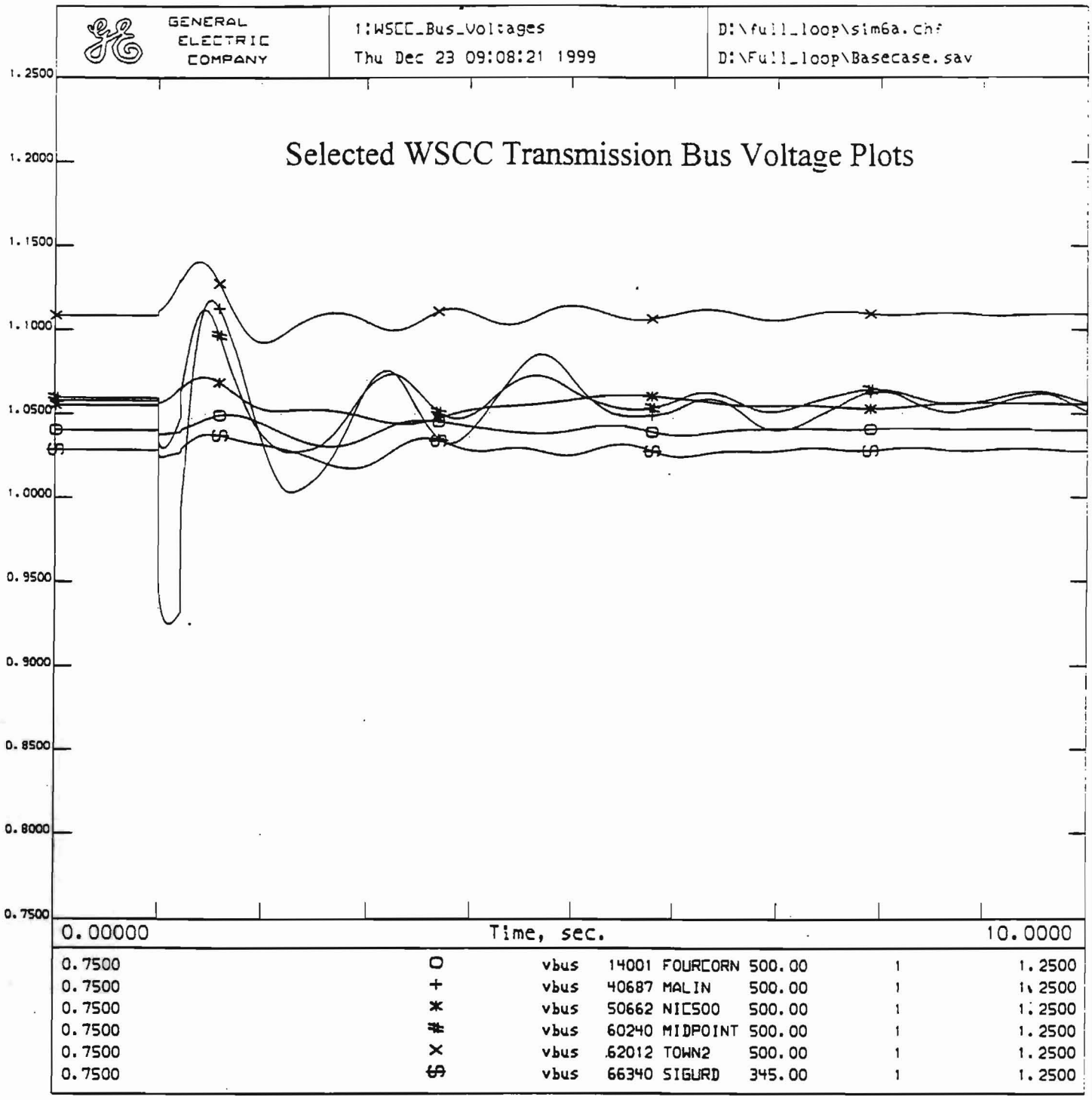
2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)



2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)



2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
DS - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)

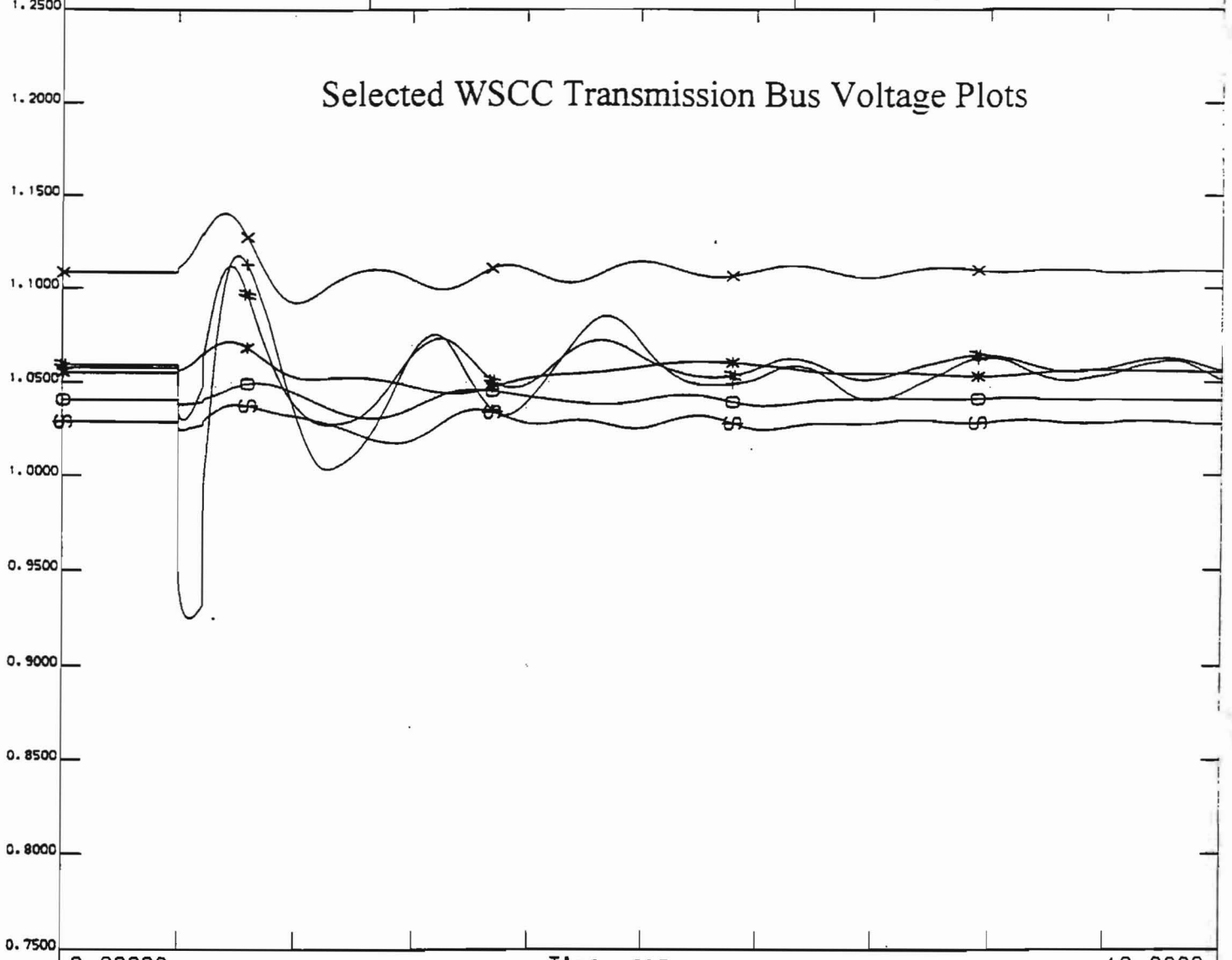


2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)

GENERAL ELECTRIC COMPANY

1:WSCC_Bus_Voltages
Thu Dec 23 09:08:21 1999

D:\full_loop\sim6a.chf
D:\Full_loop\Basecase.sav



0.00000	Time, sec.					10.0000
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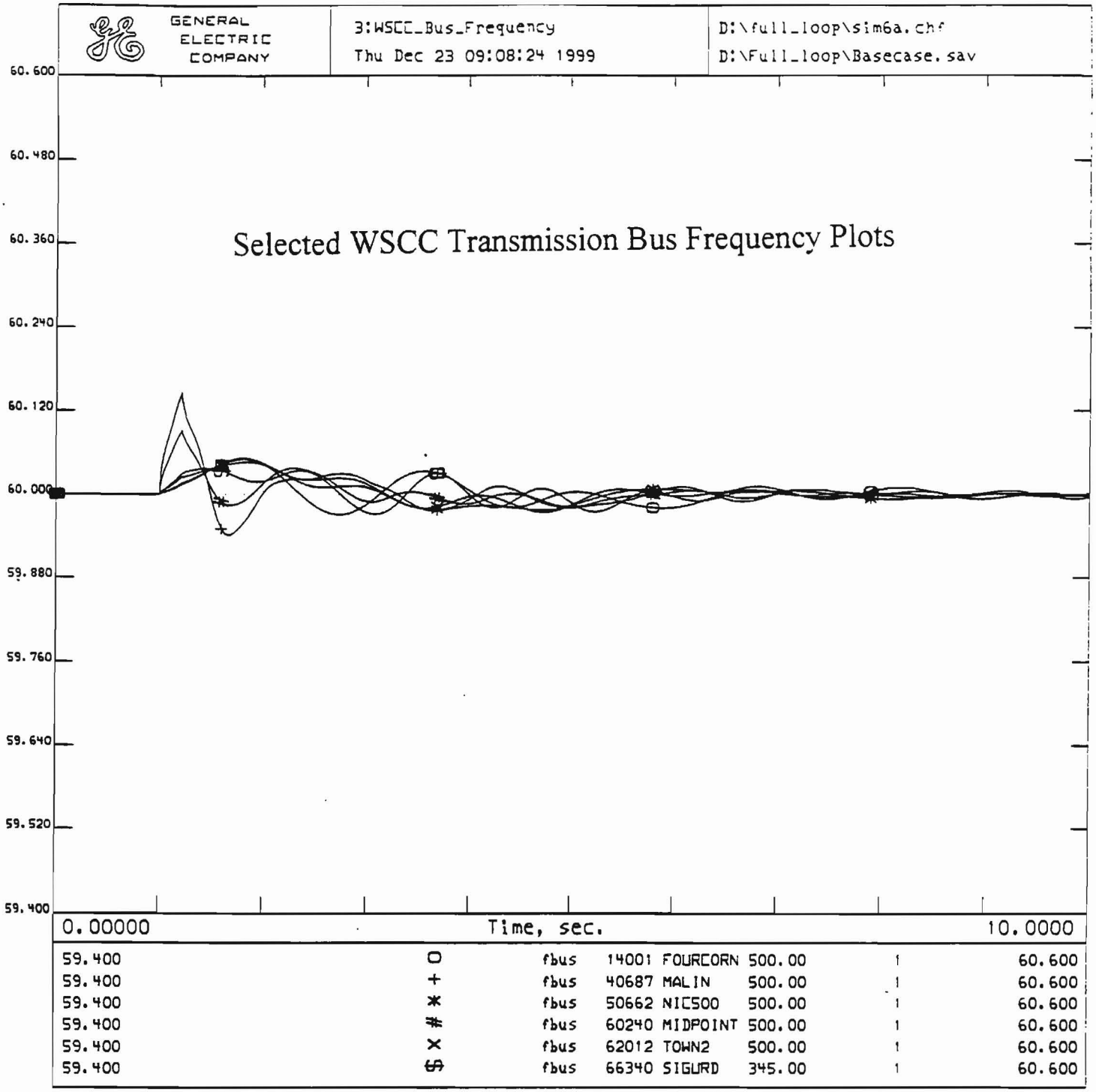
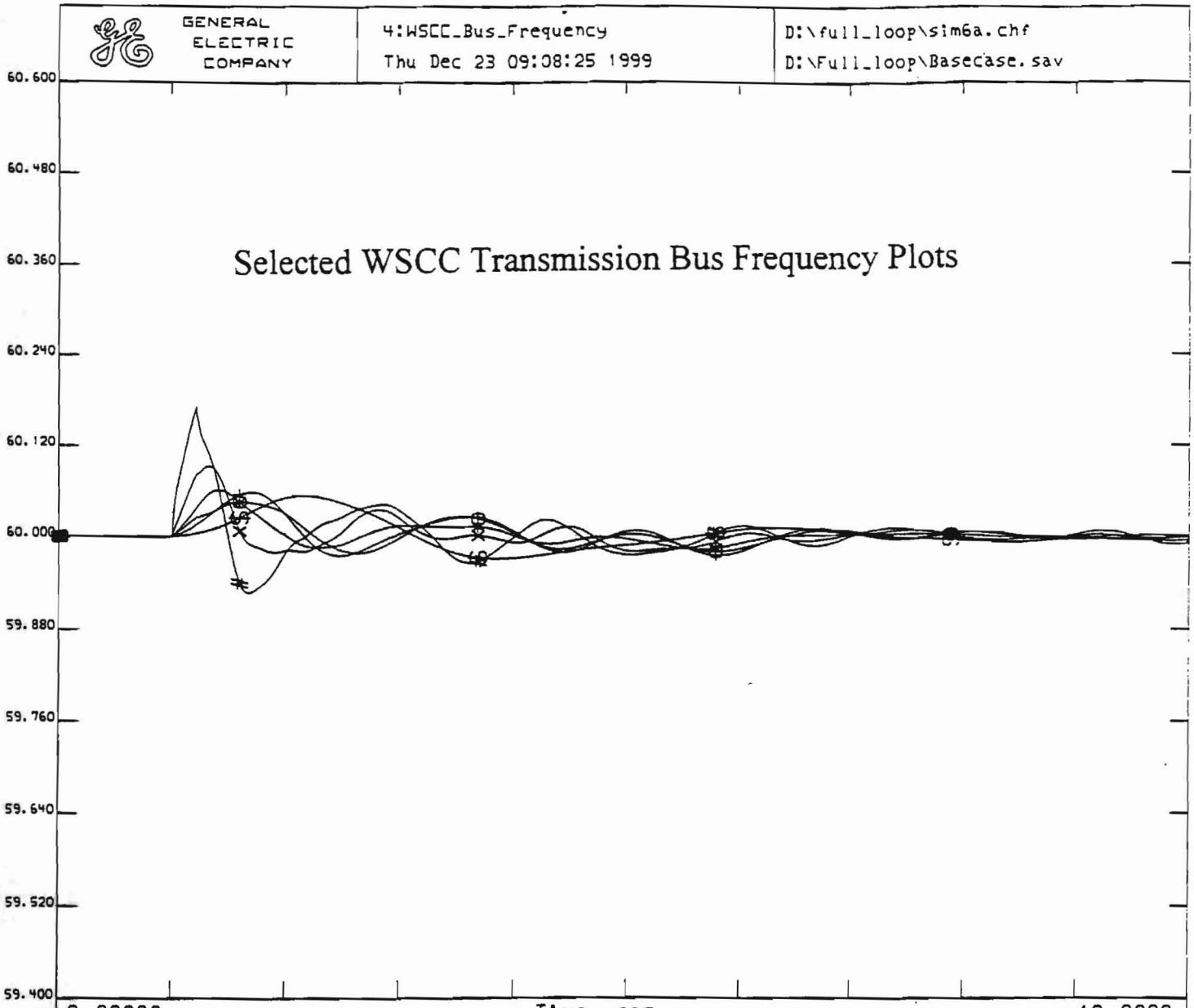
0.7500	+	vbus	40687 MALIN	500.00	1	1.2500
0.7500	*	vbus	50662 NIC500	500.00	1	1.2500
0.7500	#	vbus	60240 MIDPOINT	500.00	1	1.2500
0.7500	x	vbus	62012 TOWN2	500.00	1	1.2500
0.7500	6	vbus	66340 SIGURD	345.00	1	1.2500

2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)



2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)



59.400	o	fbus	14003 NAVAJO	500.00	1	60.600
59.400	+	fbus	22090 IMPRLVLY	500.00	1	60.600
59.400	*	fbus	24153 MIRALOMA	500.00	1	60.600
59.400	#	fbus	30015 TABLE MT	500.00	1	60.600
59.400	x	fbus	30060 MIDWAY	500.00	1	60.600
59.400	$	fbus	54150 LANGDON	500.00	1	60.600

2002 Summer Peak Case for Metcalf Energy Center
Additional Studies
D5 - Breaker Failure 3-phase fault with normal clearing
Bus Tie CB 200 between Bus Section 1D and 2D fails to open
on Bus Fault at Newark 230 kV Bus 1D (Bus 30630)