Imperial Valley Study Group

Appendix C

Transmission Planning Studies
Vol. 3

Stability Data

Imperial Valley Study Group

Appendix C.1

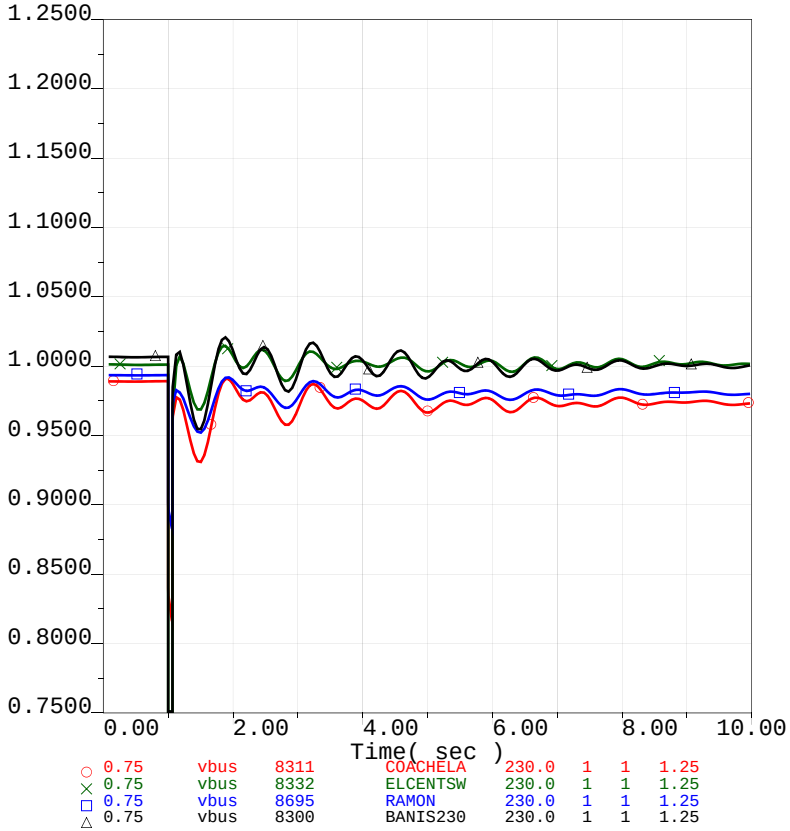
Stability Plots

Imperial Valley Study Group

Appendix C.1.1

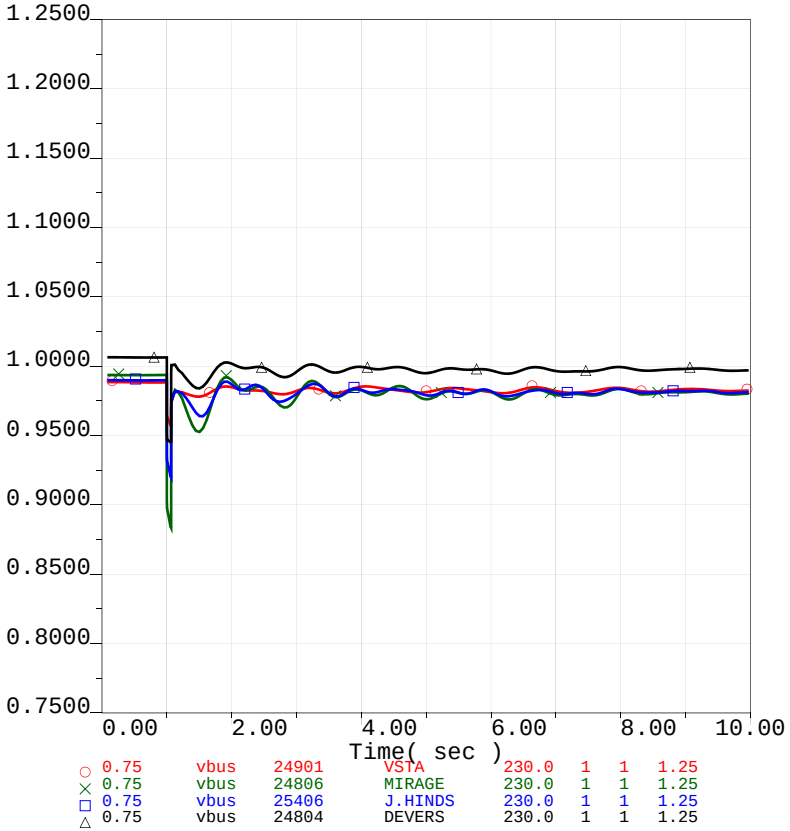
Heavy Summer

IID Busses



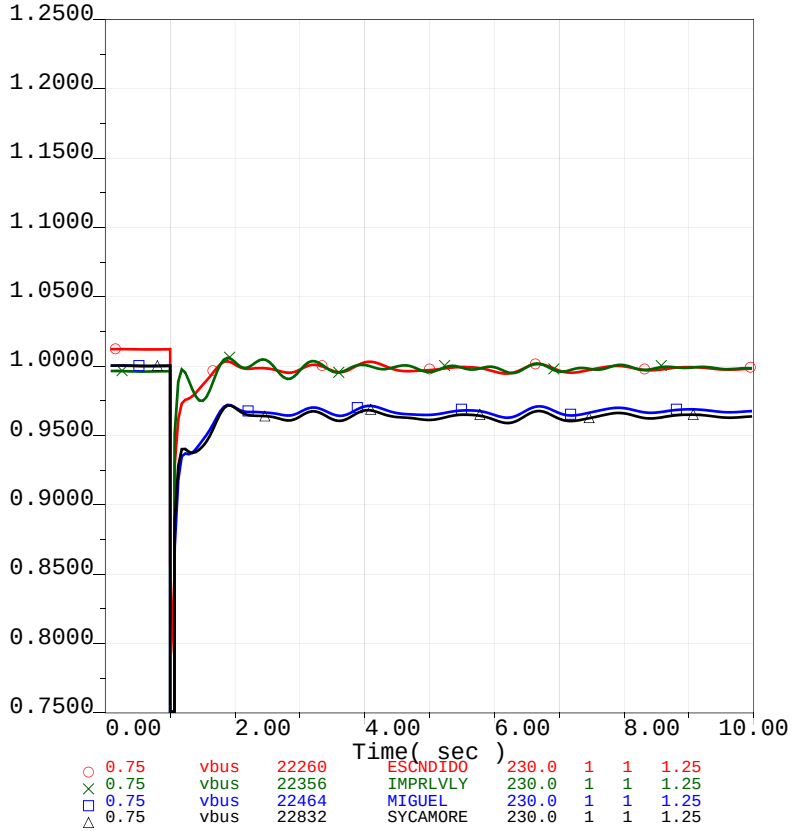
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



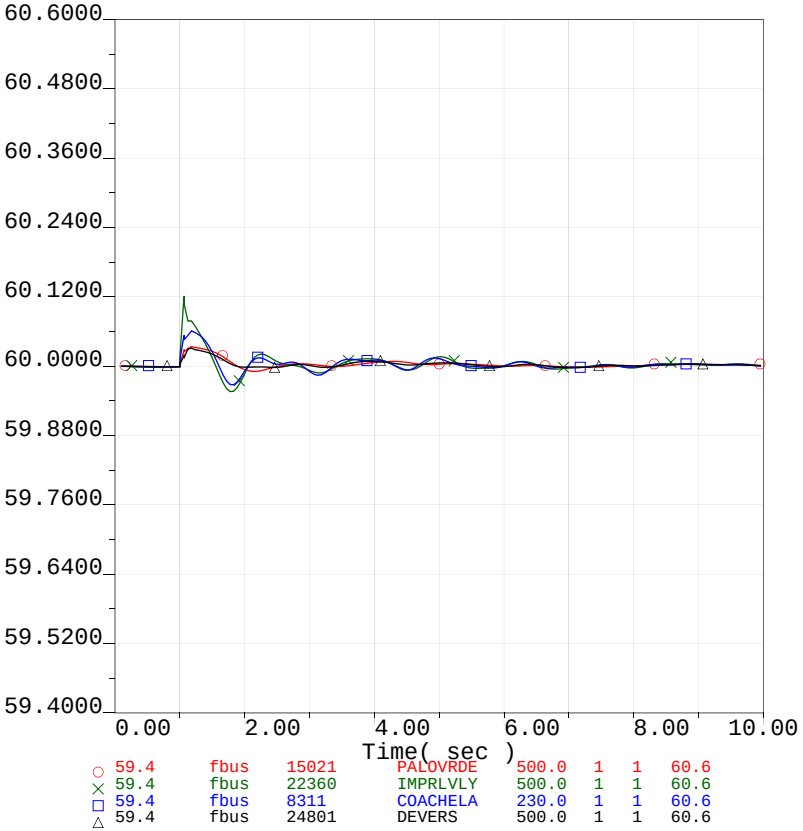
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SDGE Busses



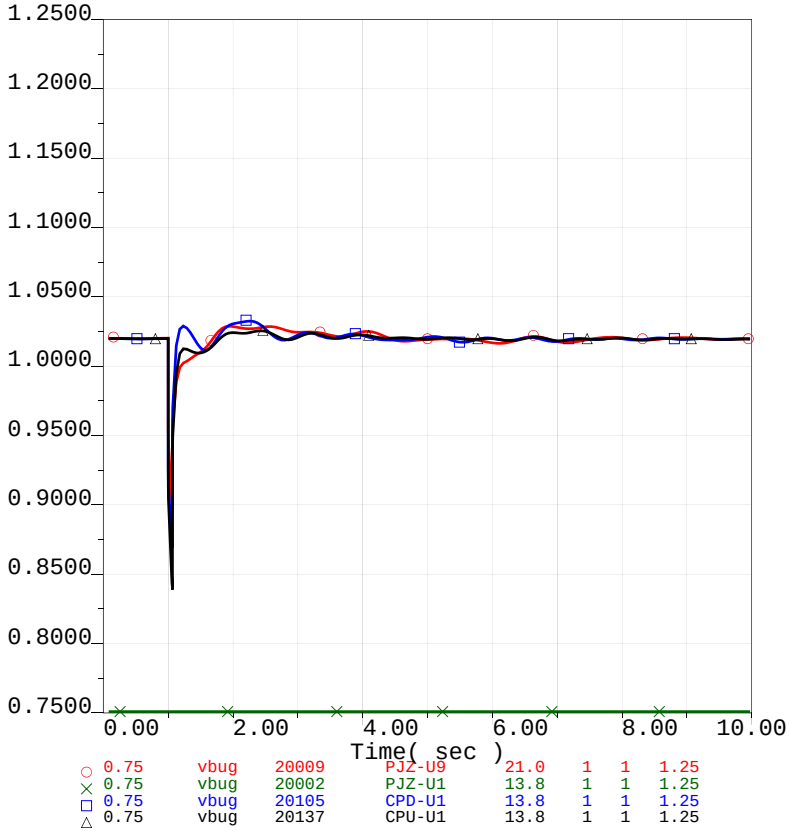
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

FBus Readings



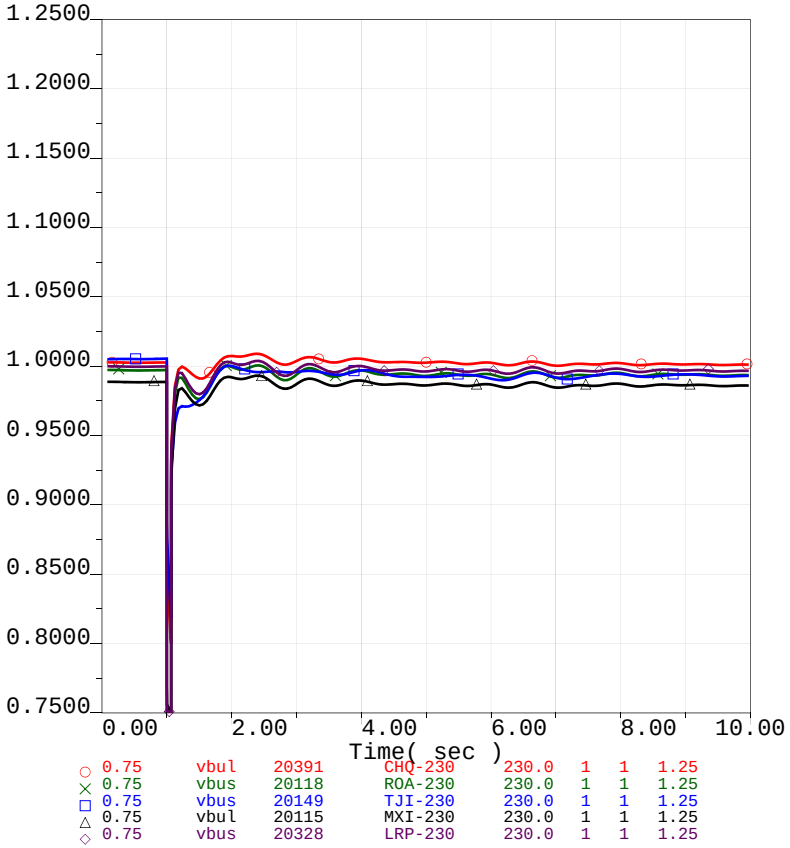
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 1



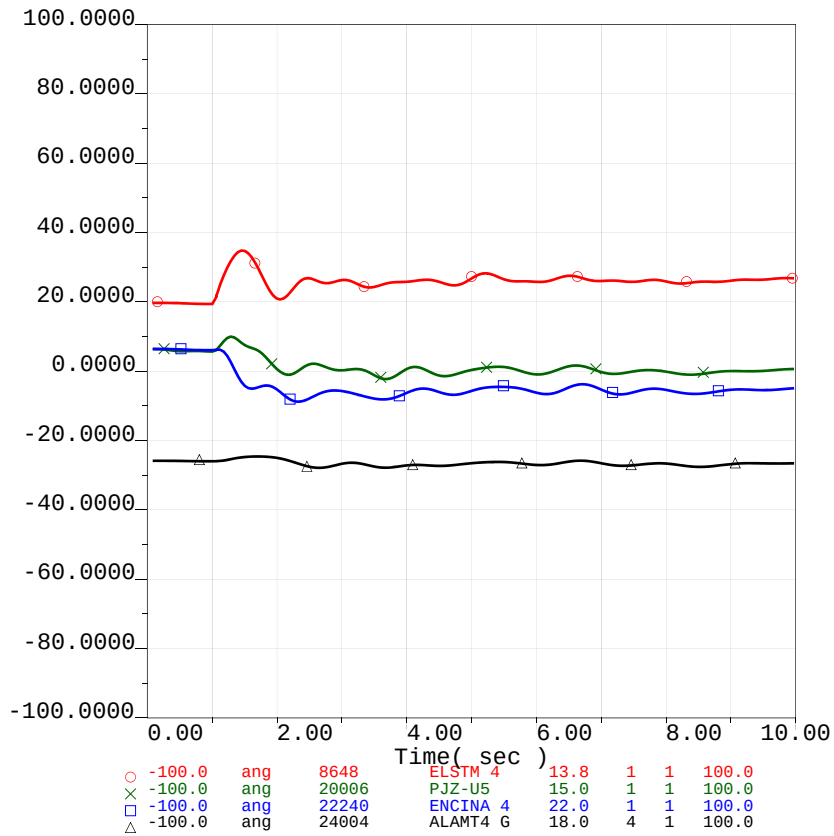
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 2



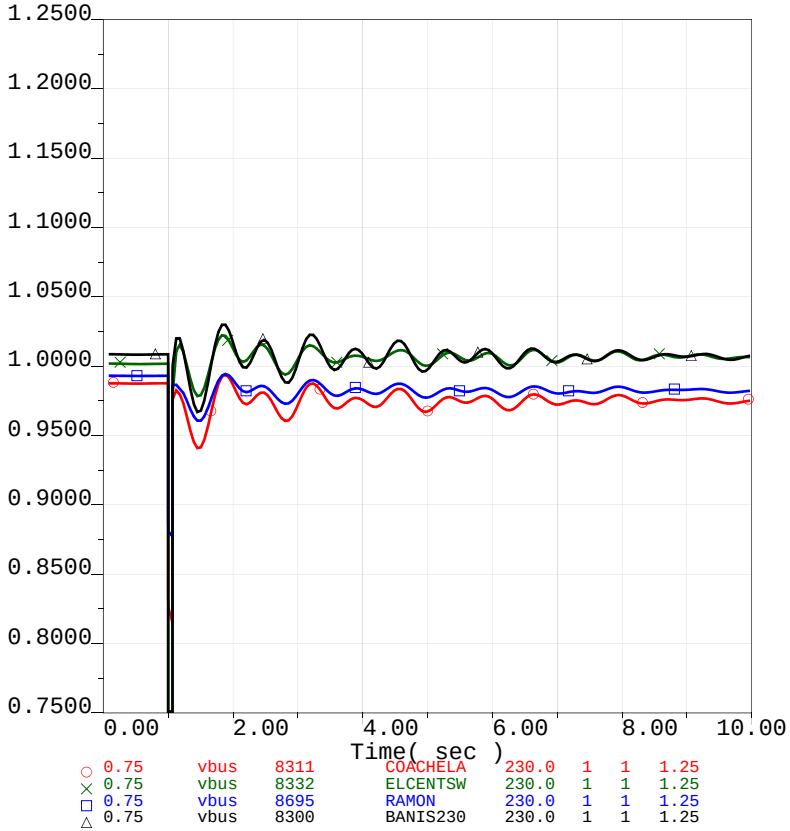
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

Rotor Angles for Gen Busses



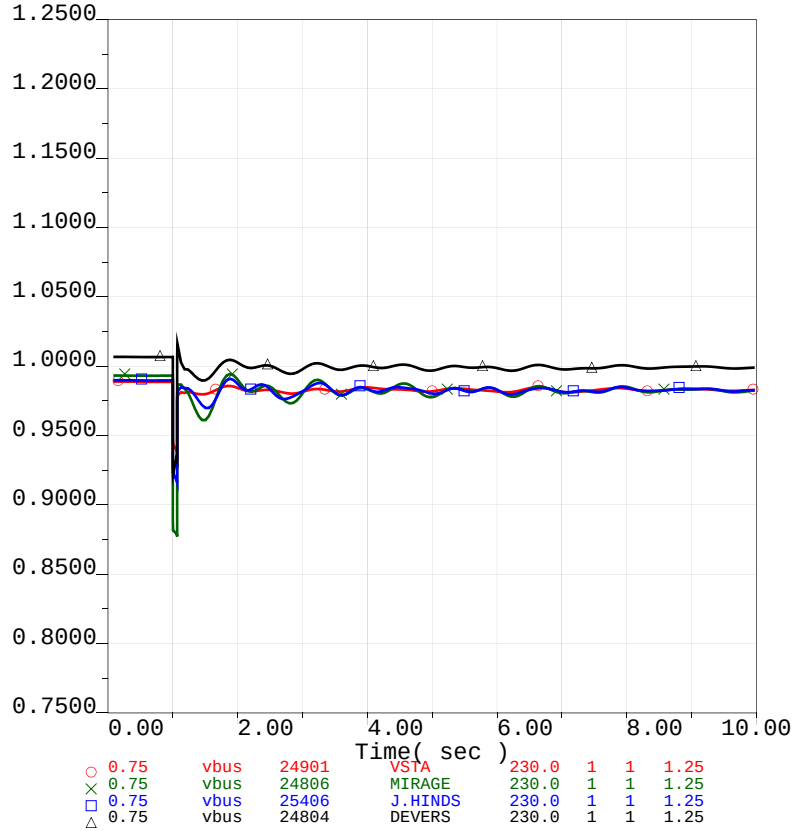
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

IID Busses



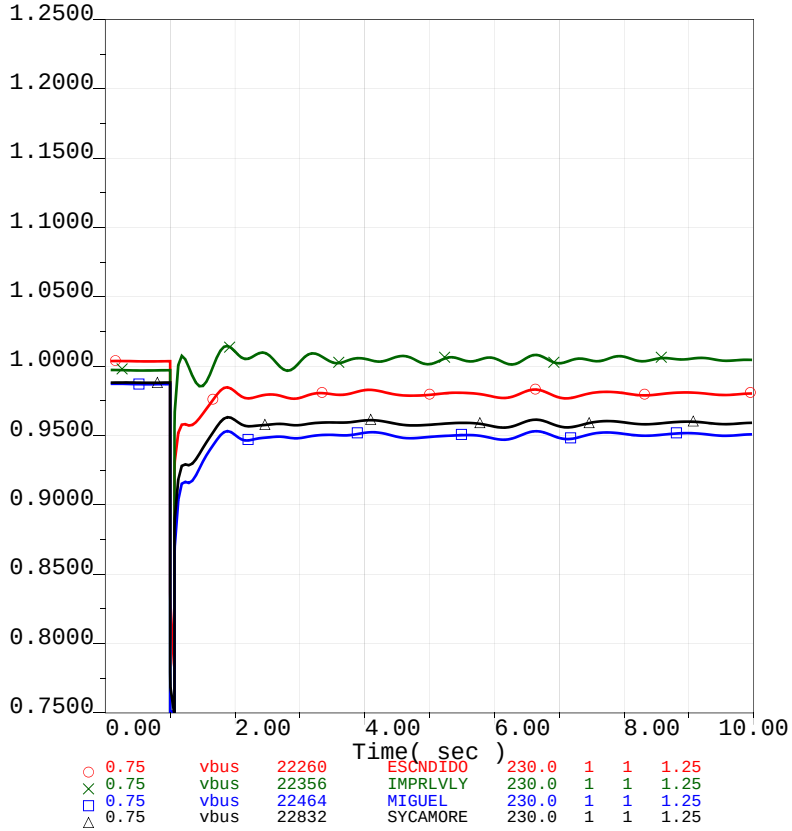
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



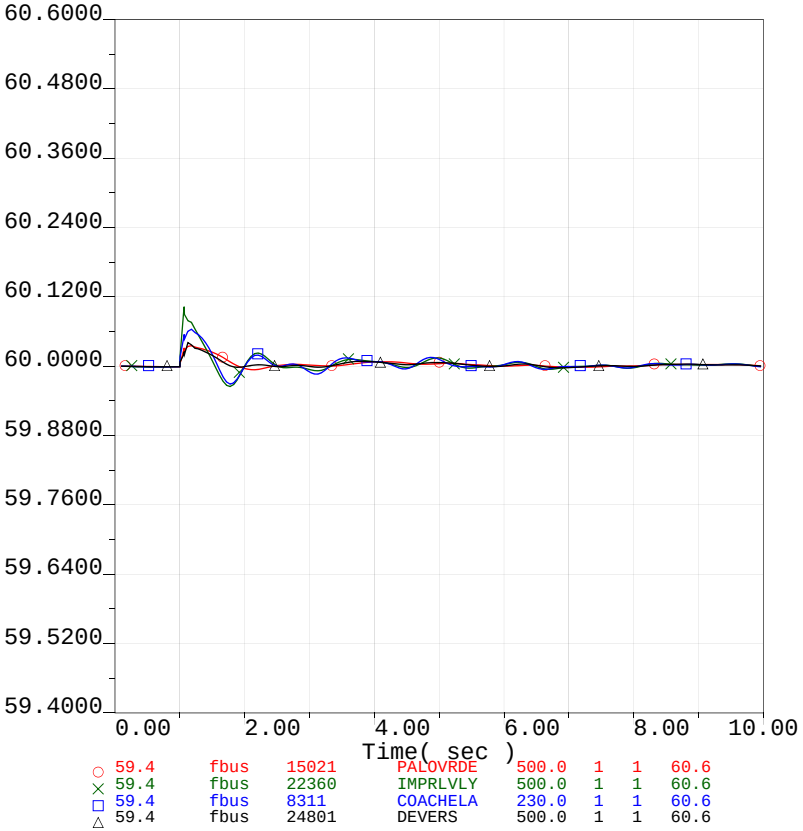
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SDGE Busses



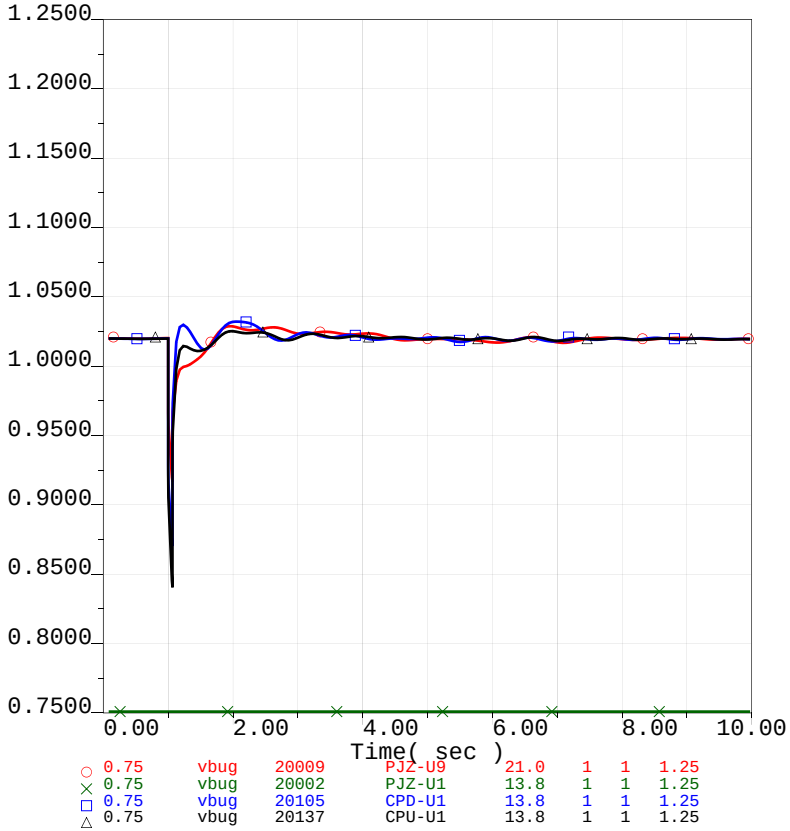
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

FBus Readings



IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 1

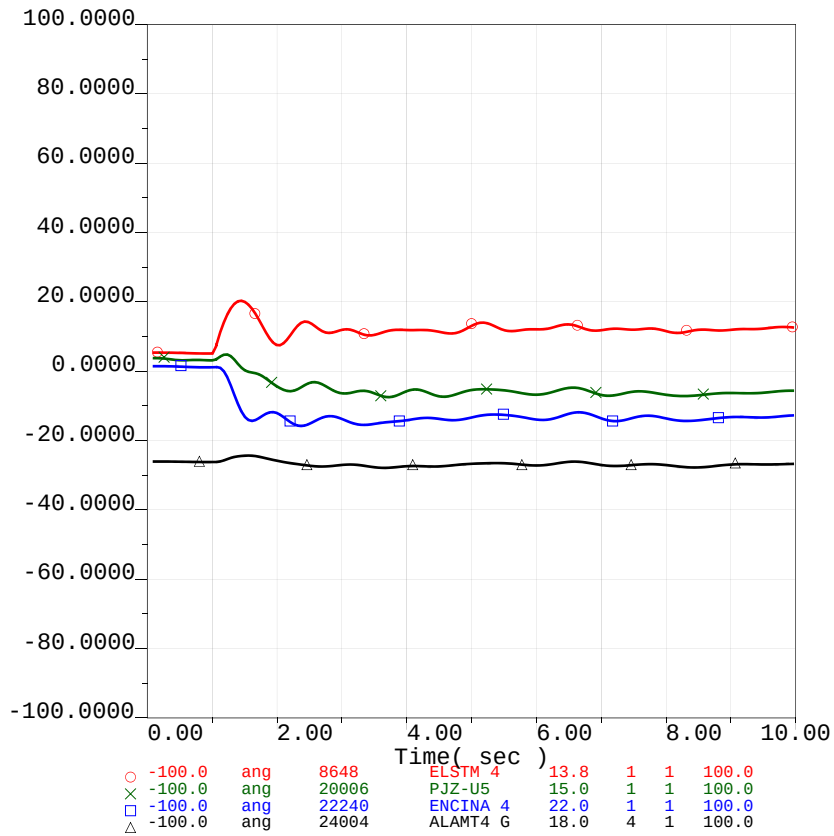


IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 2

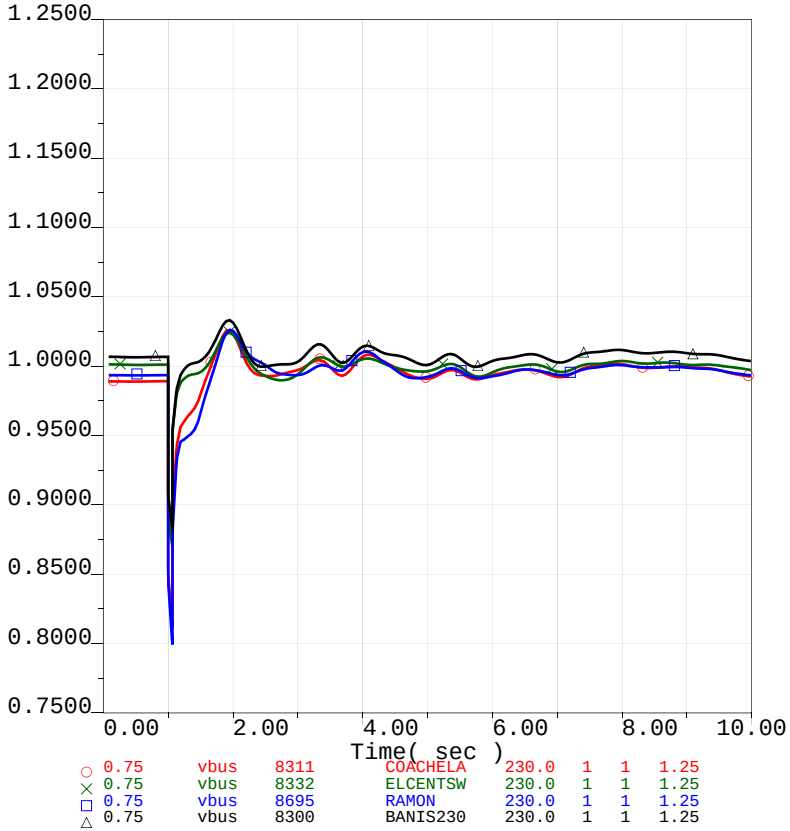
IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

Rotor Angles for Gen Busses



IVSG STUDY
2014 Heavy Summer Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

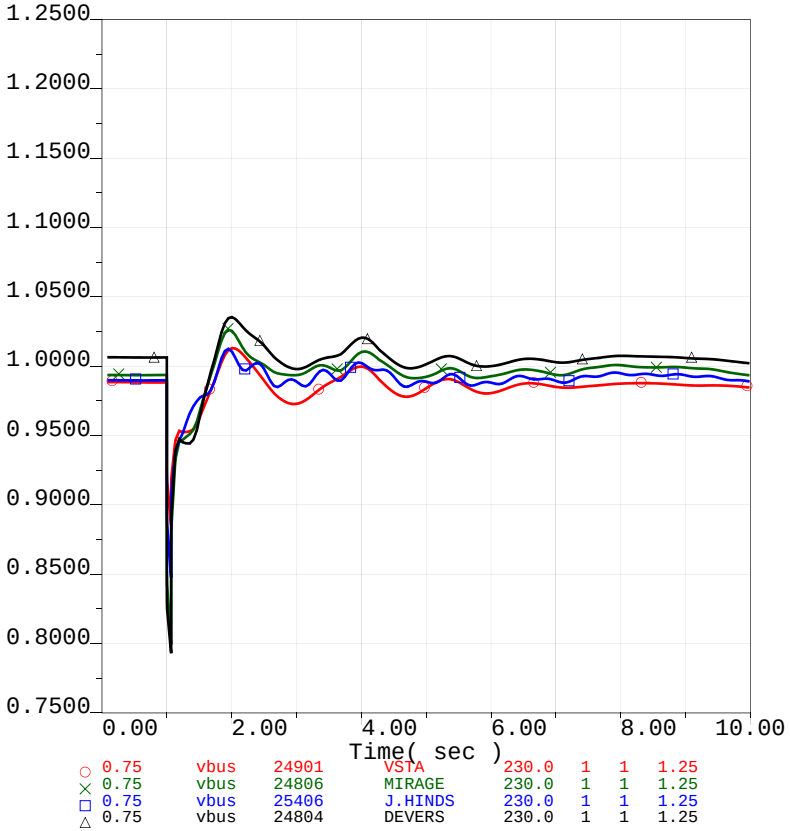
IID Busses



IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hang | Wed Jun 08 12:47:19 2005

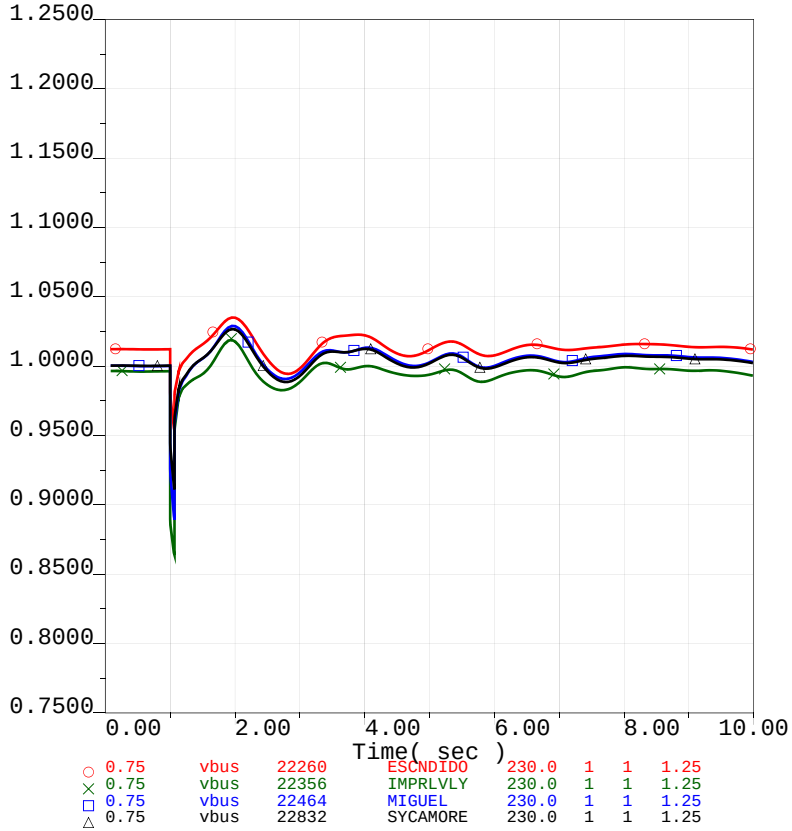
SCE Busses



IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hang | Wed Jun 08 12:47:20 2005

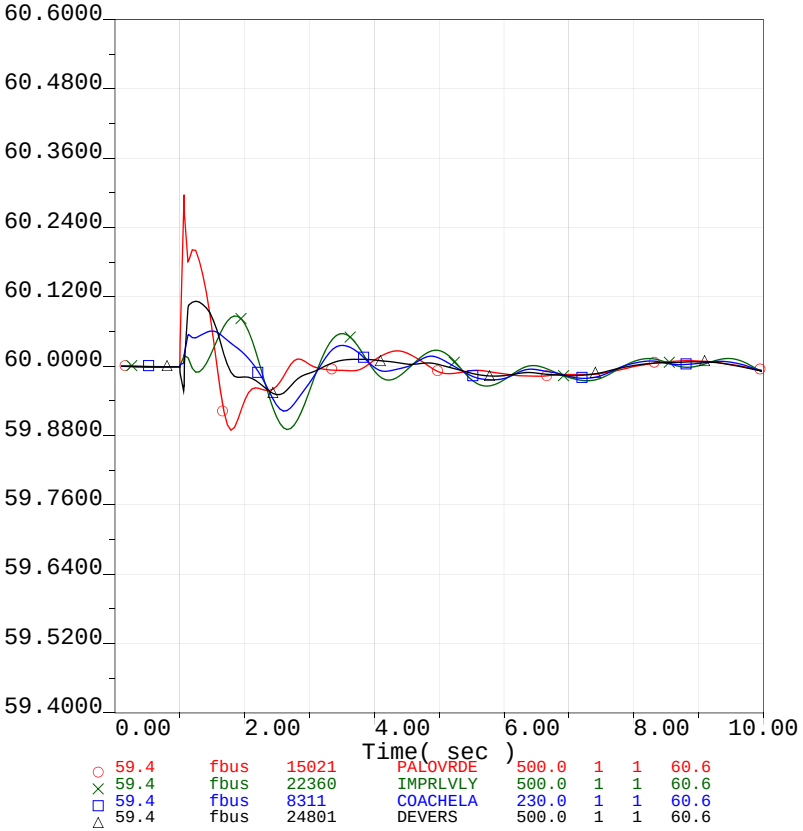
SDGE Busses



IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hang | Wed Jun 08 12:47:20 2005

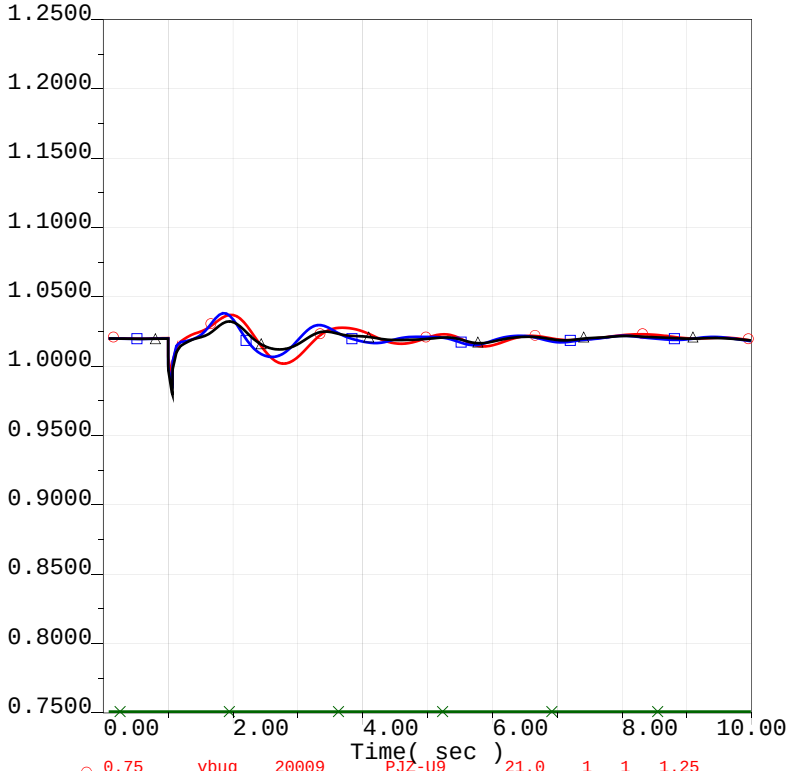
FBus Readings



IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hang | Wed Jun 08 12:47:21 2005

CFE Busses Page 1

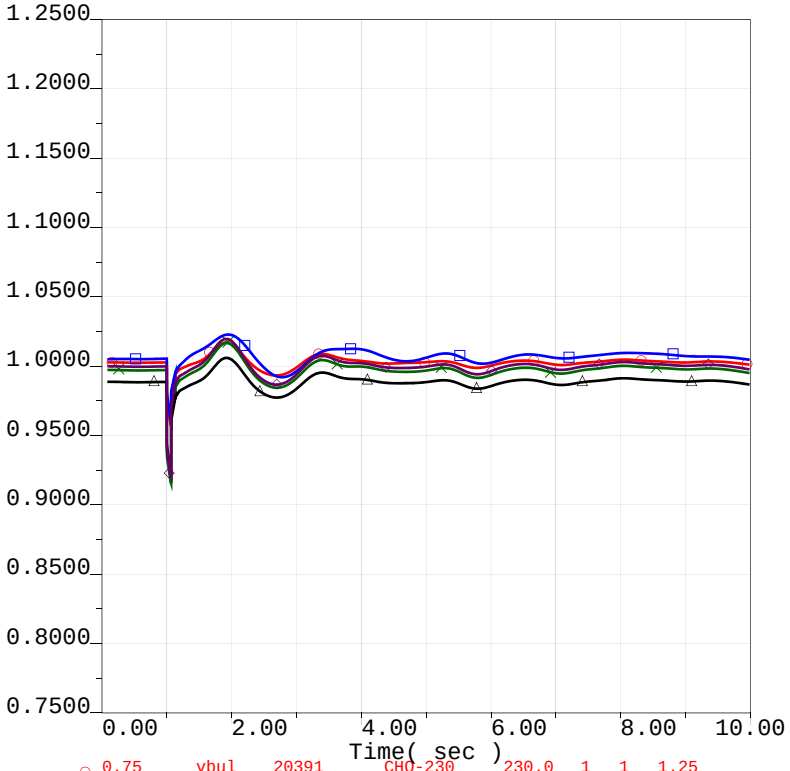


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hang | Wed Jun 08 12:47:22 2005

CFE Busses Page 2

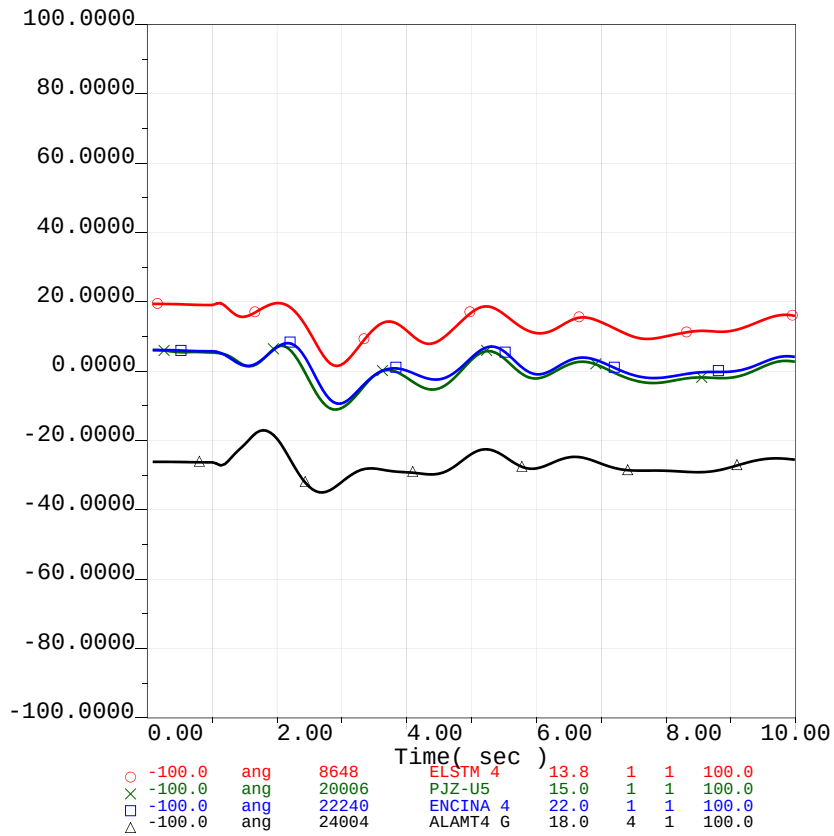


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hang | Wed Jun 08 12:47:23 2005

Rotor Angles for Gen Busses

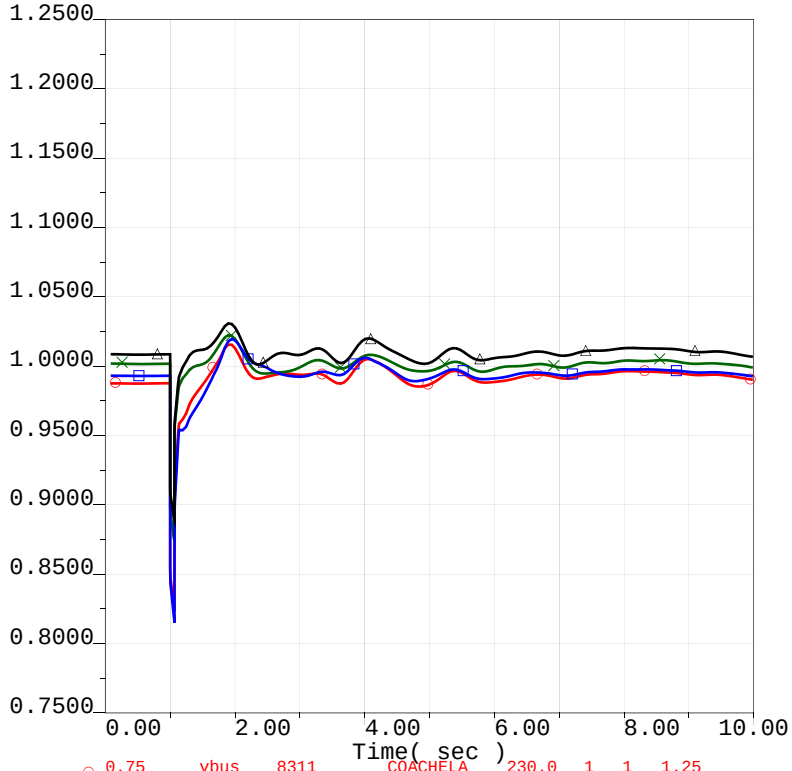


IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hang

Wed Jun 08 12:47:24 2005

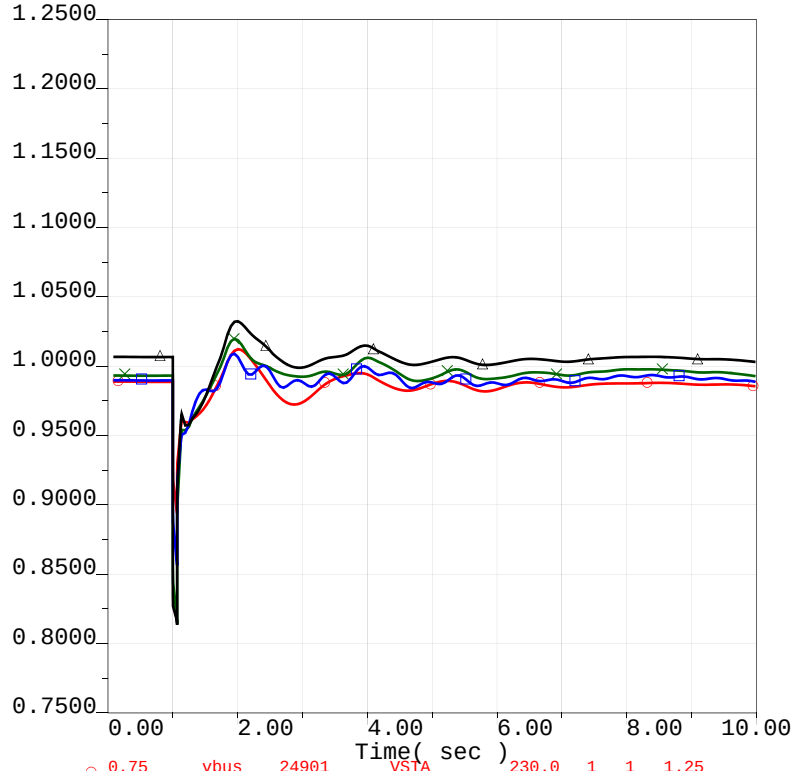
IID Busses



○ 0.75	vbus	8311	COACHELA	230.0	1	1	1.25
× 0.75	vbus	8332	ELCENTSW	230.0	1	1	1.25
□ 0.75	vbus	8695	RAMON	230.0	1	1	1.25
△ 0.75	vbus	8300	BANIS230	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

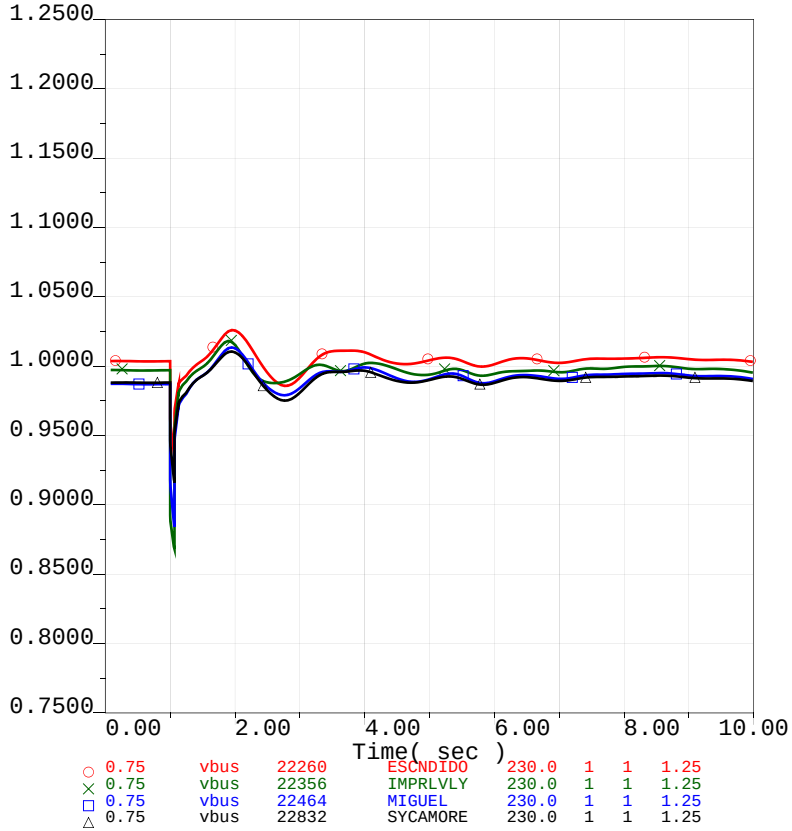
SCE Busses



○ 0.75	vbus	24901	VSTA	230.0	1	1	1.25
× 0.75	vbus	24806	MIRAGE	230.0	1	1	1.25
□ 0.75	vbus	25406	J.HINDS	230.0	1	1	1.25
△ 0.75	vbus	24804	DEVERS	230.0	1	1	1.25

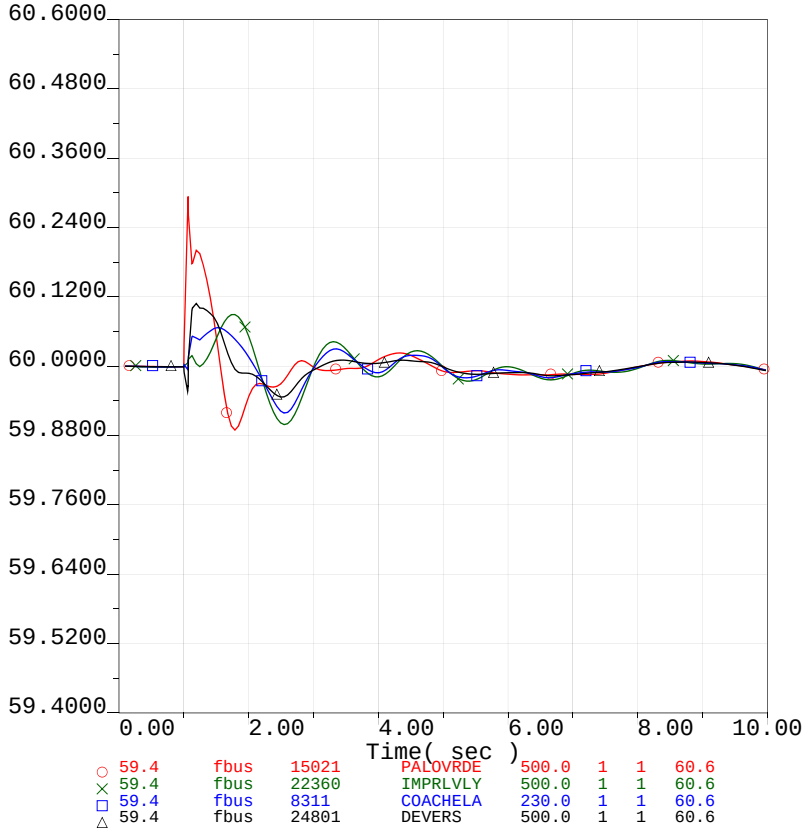
IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SDGE Busses



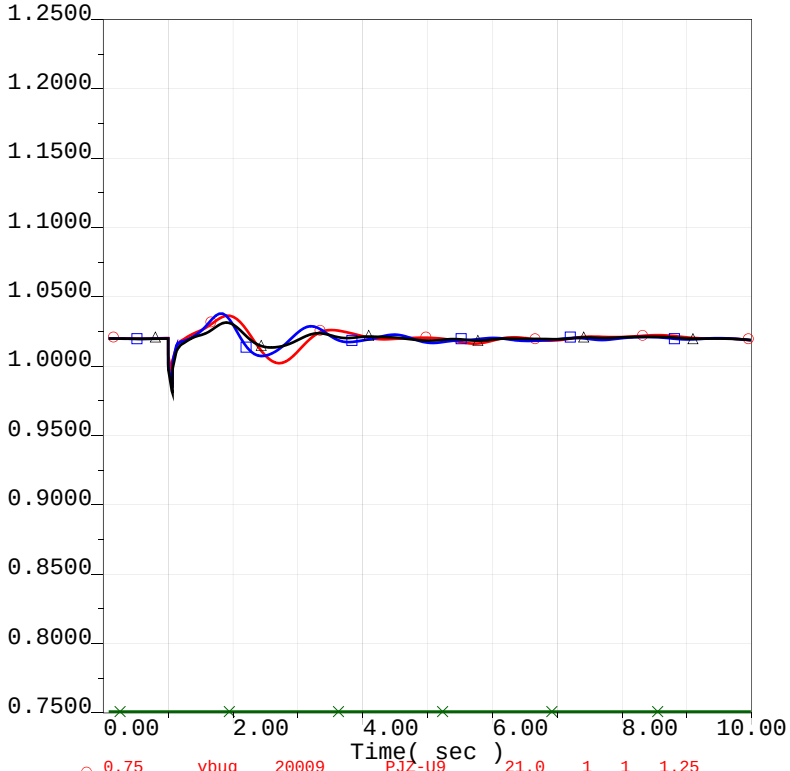
IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

FBus Readings



IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 1

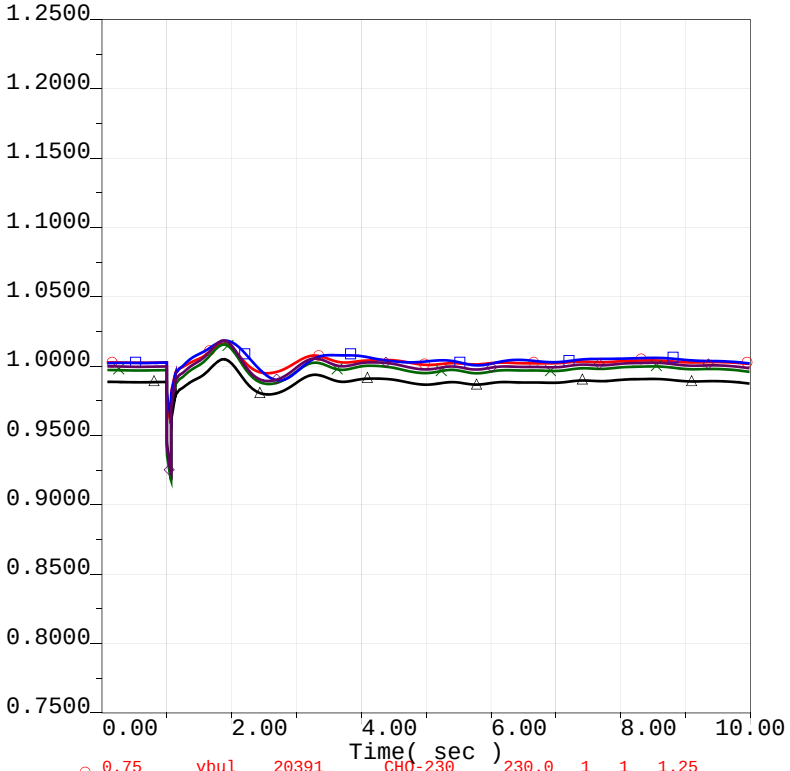


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hs_hang_alt3b | Wed Jun 08 12:51:04 2005

CFE Busses Page 2

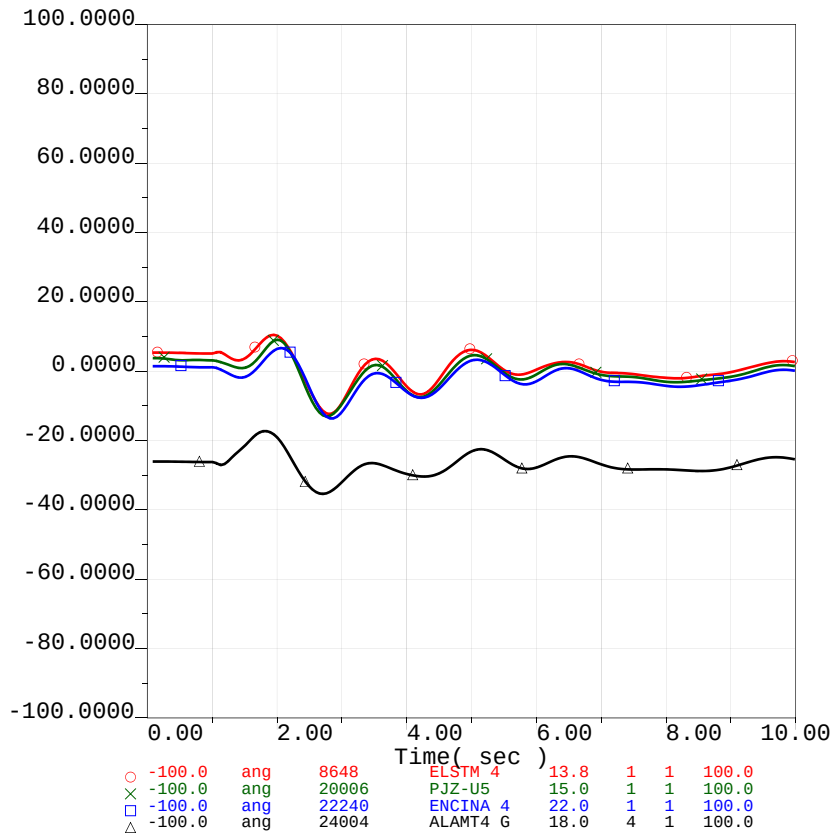


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

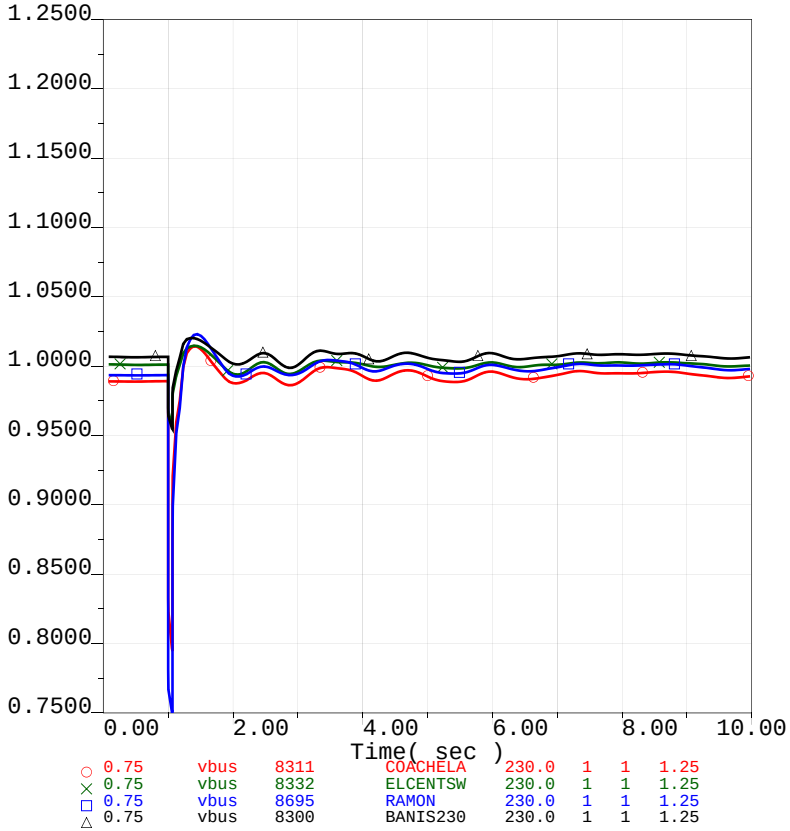
hs_hang_alt3b | Wed Jun 08 12:51:05 2005

Rotor Angles for Gen Busses



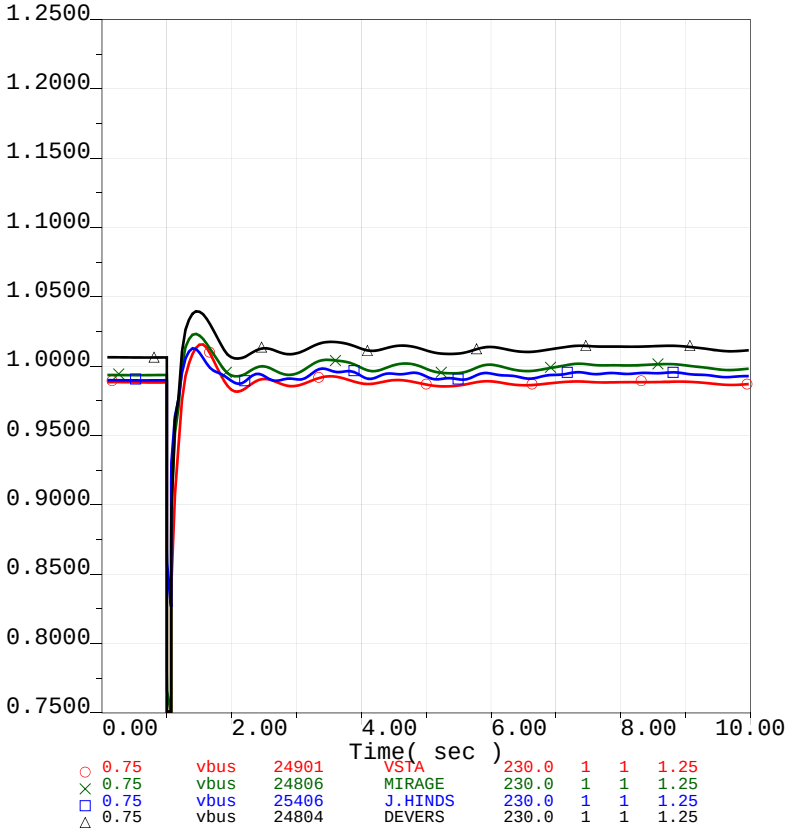
IVSG STUDY
2014 Heavy Summer Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

IID Busses



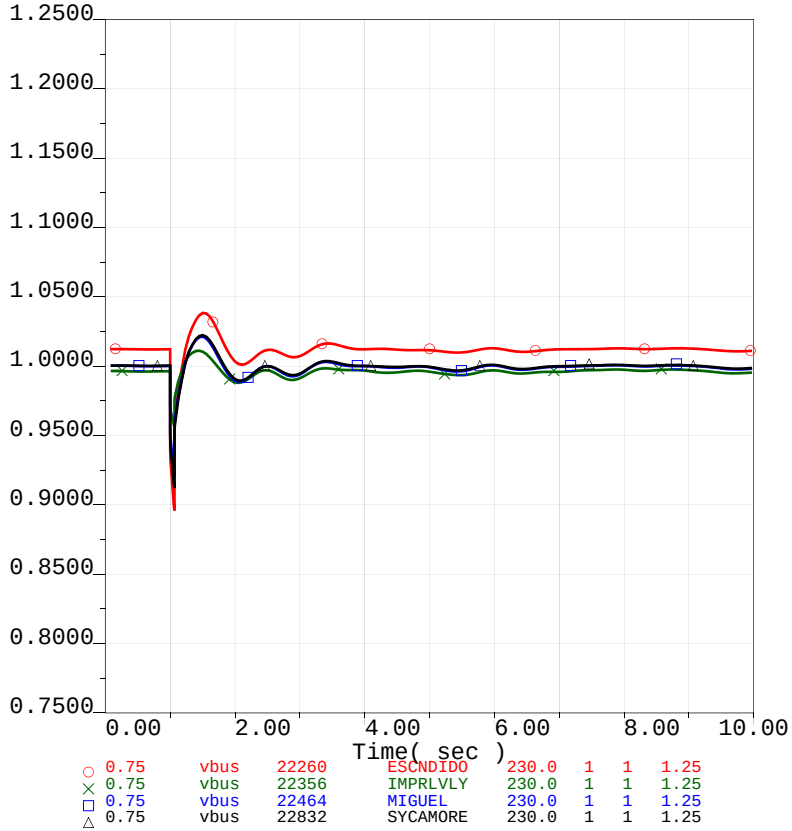
IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - Valley 500 kV Line
Case 0 - Base Case
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



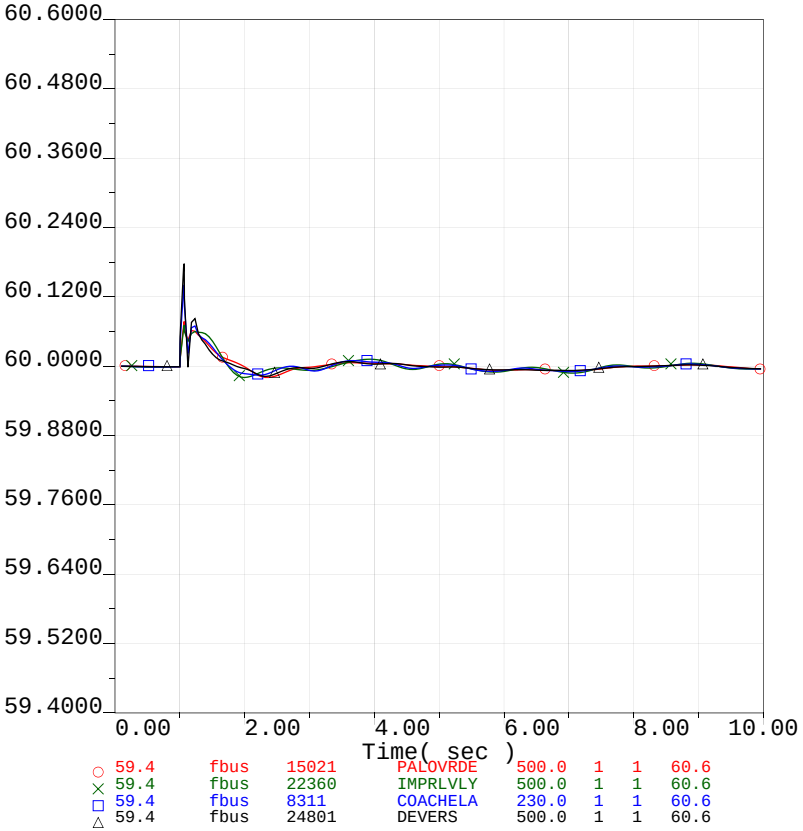
IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - Valley 500 kV Line
Case 0 - Base Case
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SDGE Busses



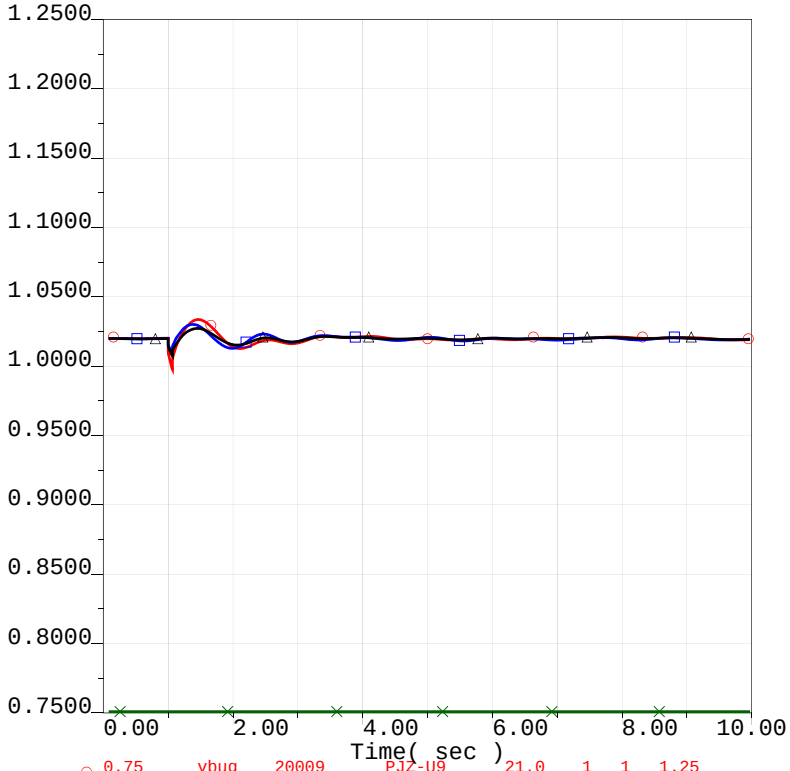
IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - Valley 500 kV Line
Case 0 - Base Case
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

FBus Readings



IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - Valley 500 kV Line
Case 0 - Base Case
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 1

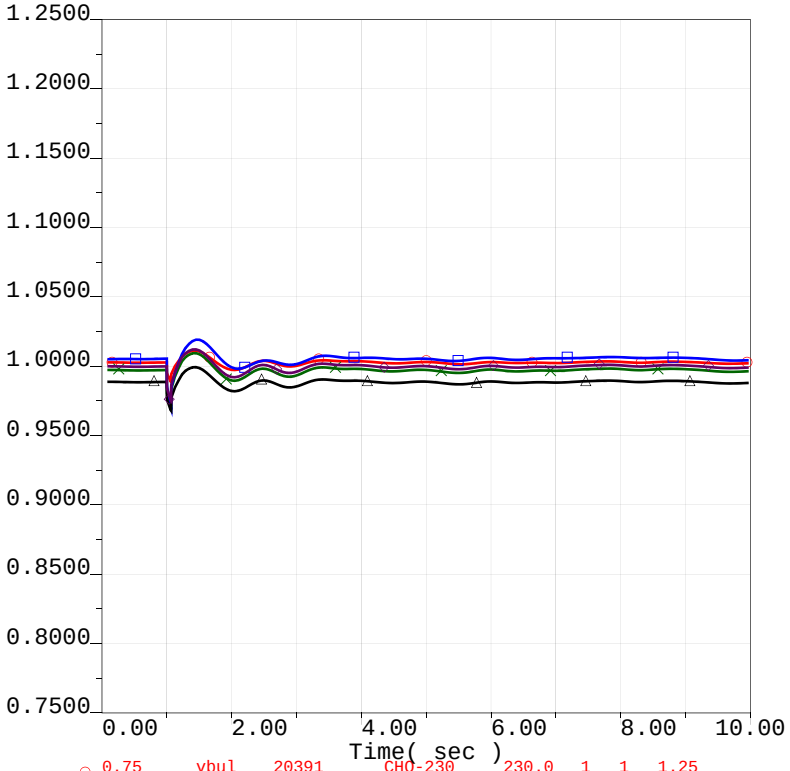


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - Valley 500 kV Line
Case 0 - Base Case
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hs_seva_alt2 | Wed Jun 08 12:56:06 2005

CFE Busses Page 2

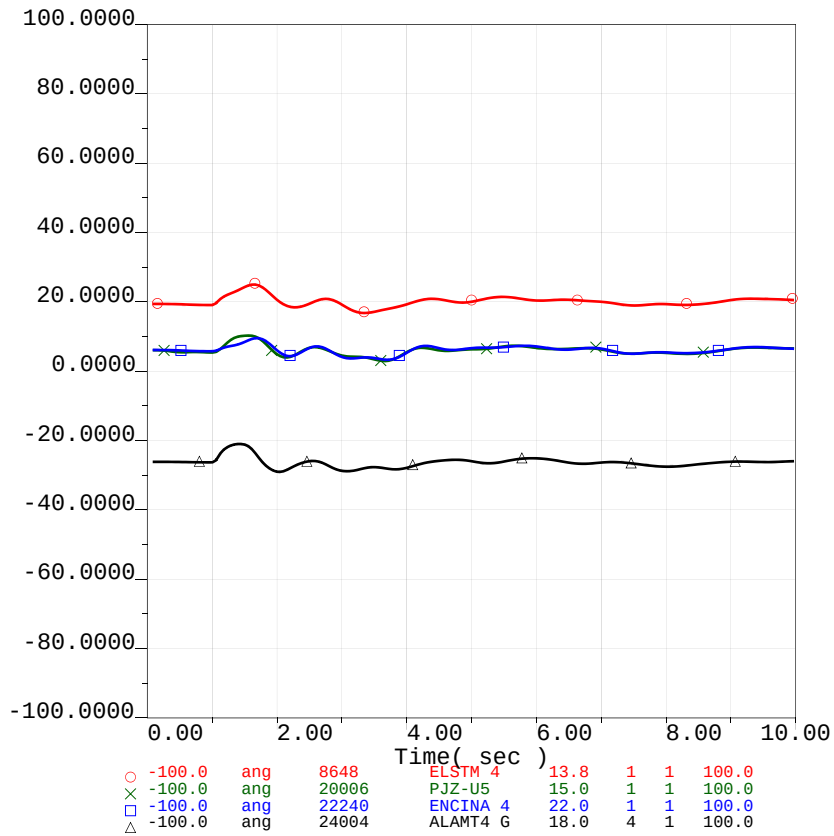


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - Valley 500 kV Line
Case 0 - Base Case
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

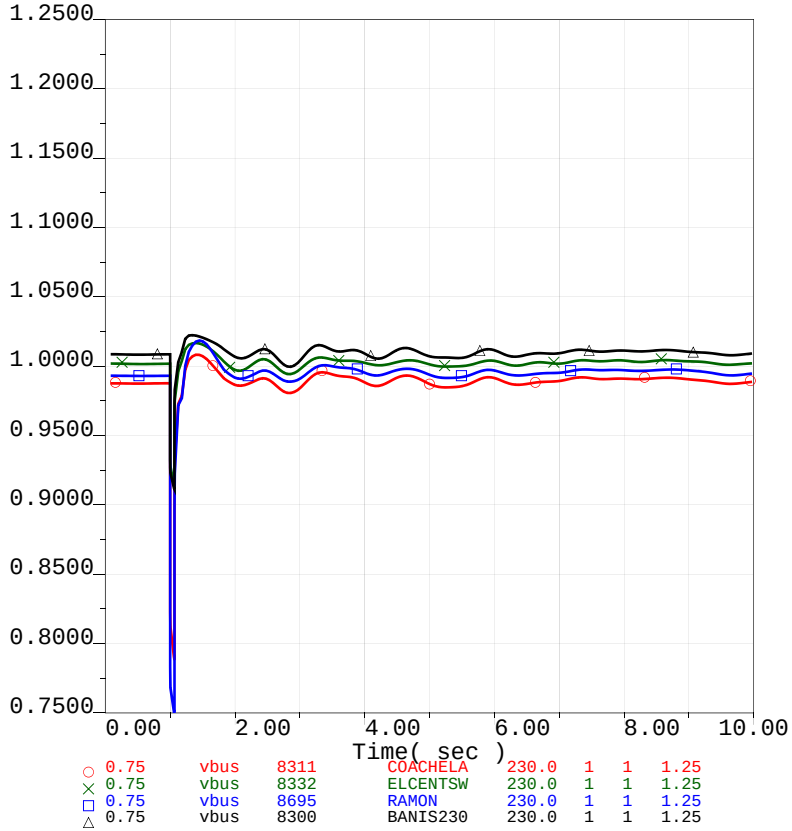
hs_seva_alt2 | Wed Jun 08 12:56:07 2005

Rotor Angles for Gen Busses



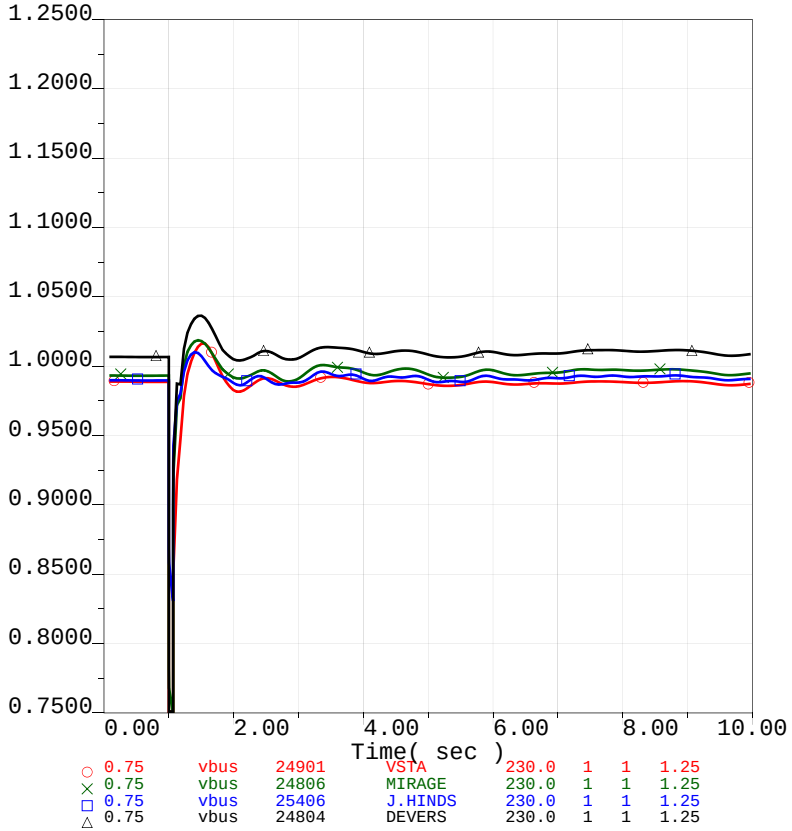
IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - Valley 500 kV Line
Case 0 - Base Case
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

IID Busses



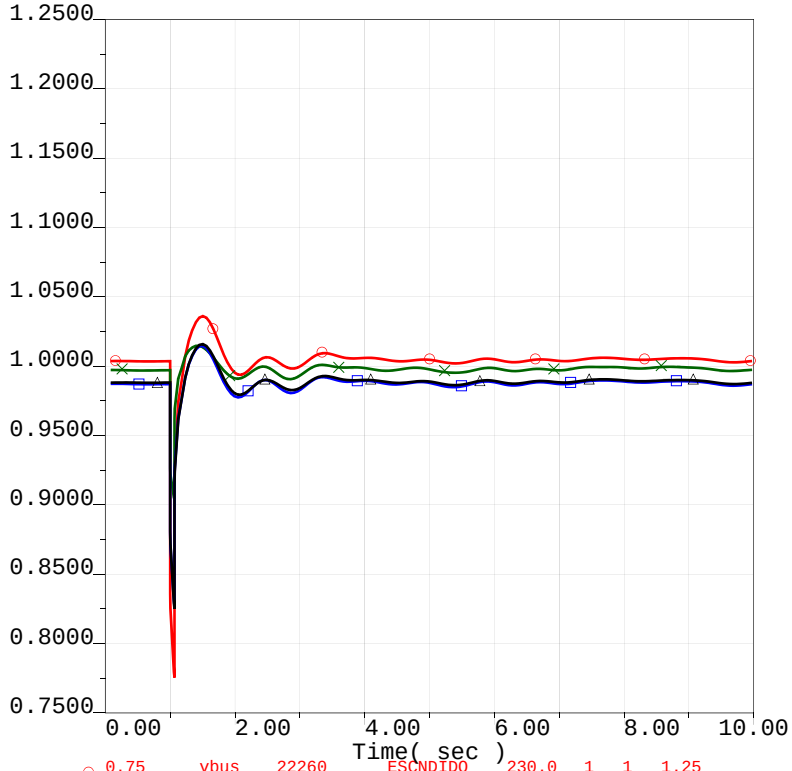
IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

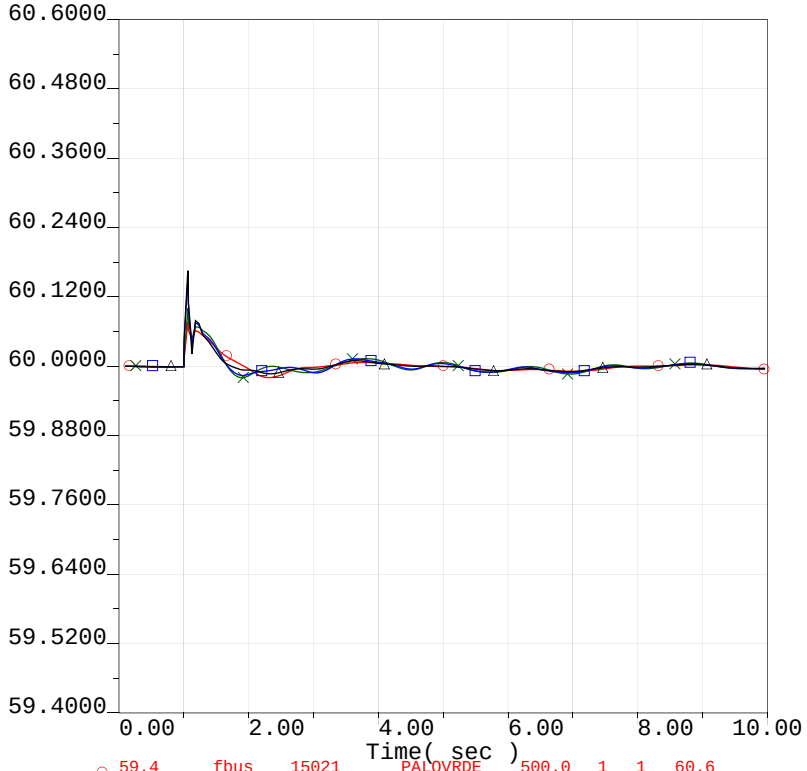
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

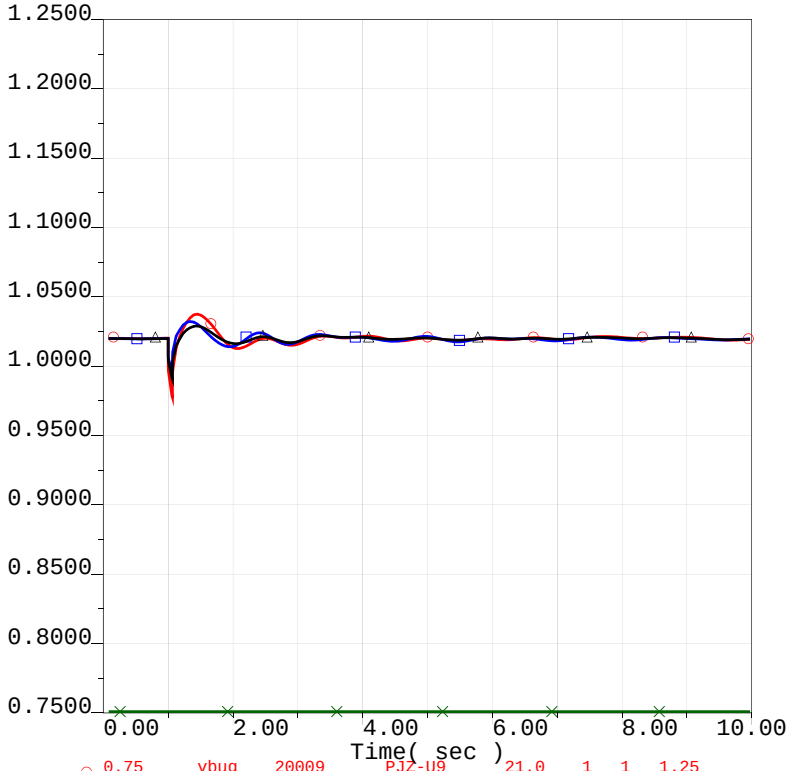
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

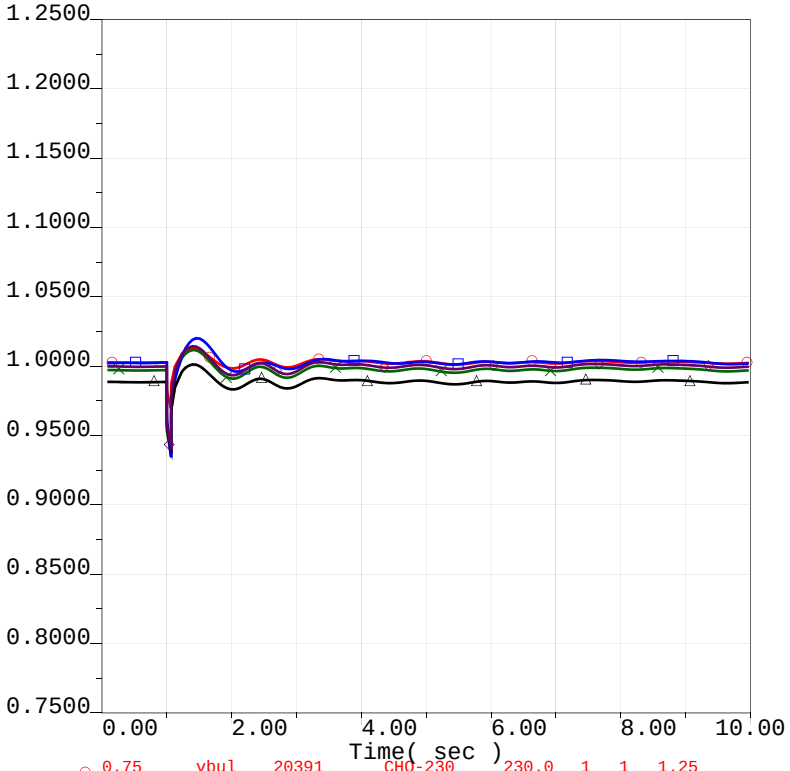
CFE Busses Page 1



○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

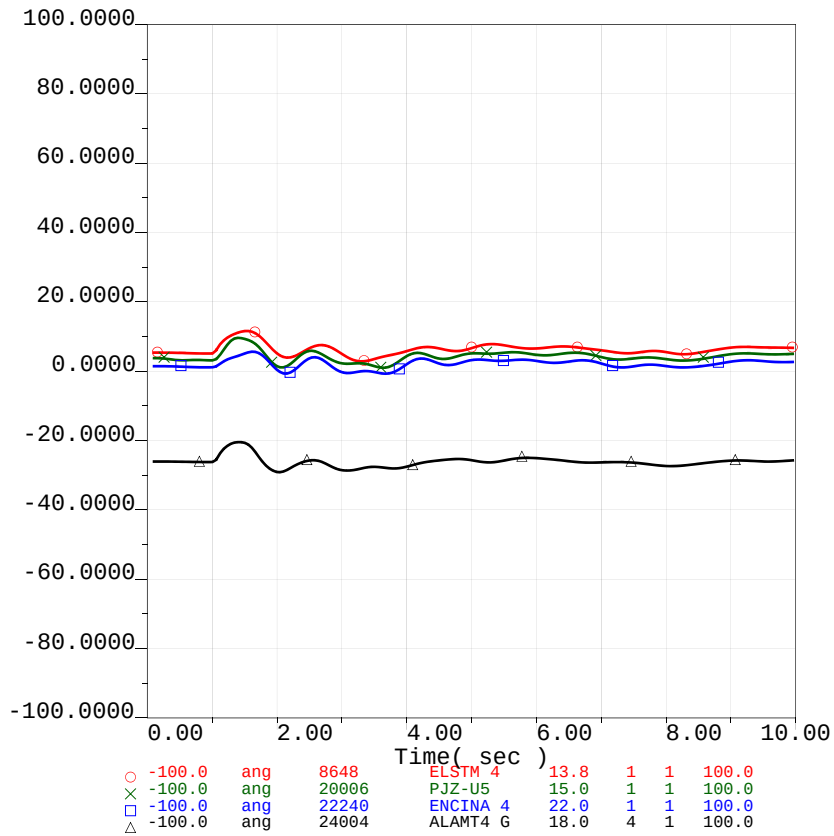
CFE Busses Page 2



○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

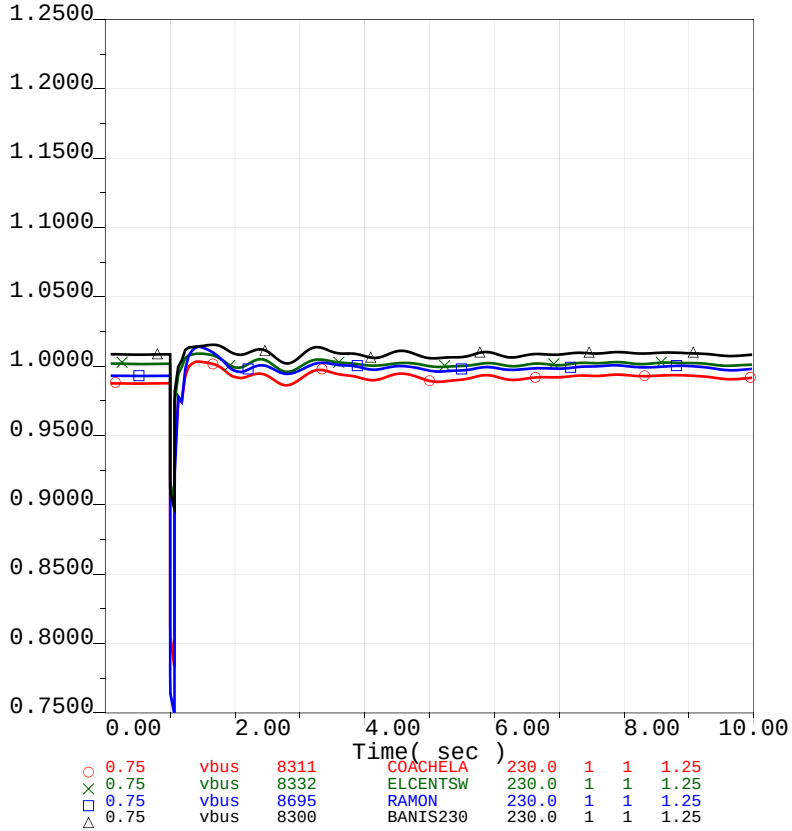
IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

Rotor Angles for Gen Busses



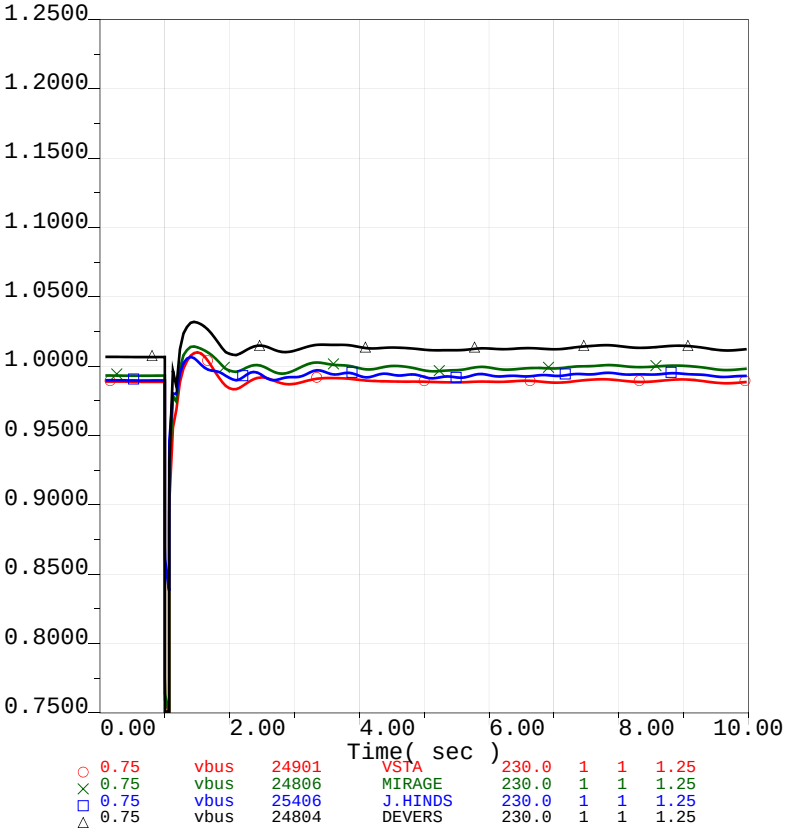
IVSG STUDY
2014 Heavy Summer Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

IID Busses



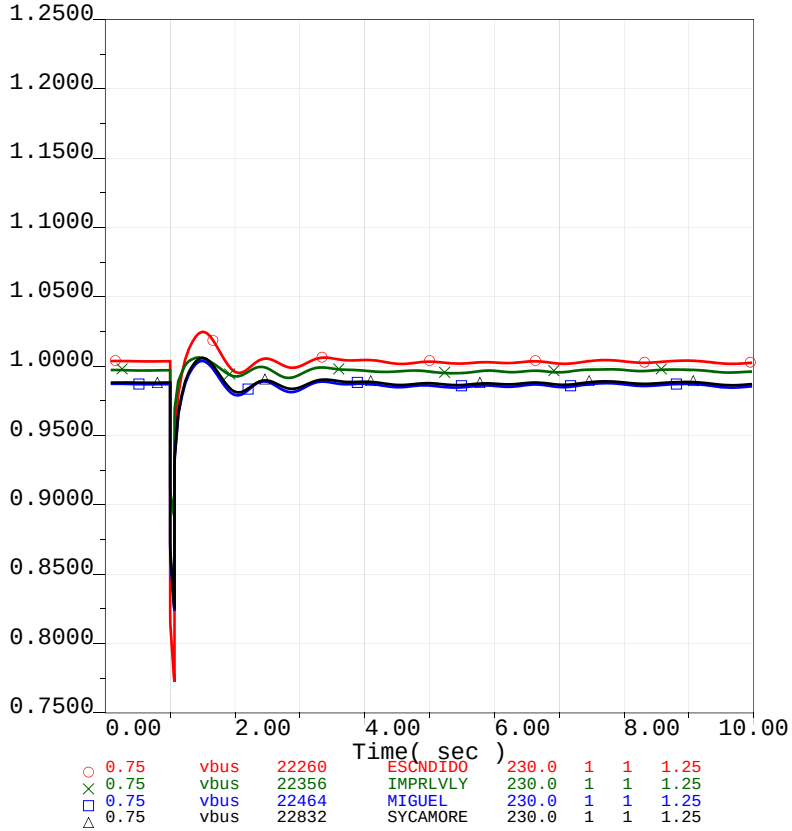
IVSG STUDY
2014 Heavy Summer Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



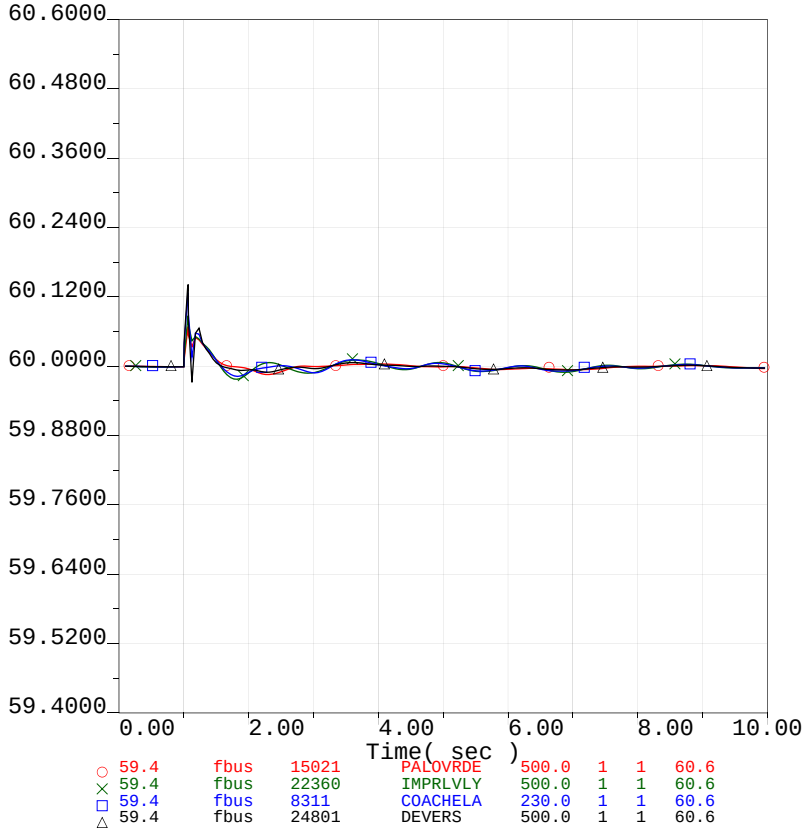
IVSG STUDY
2014 Heavy Summer Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SDGE Busses



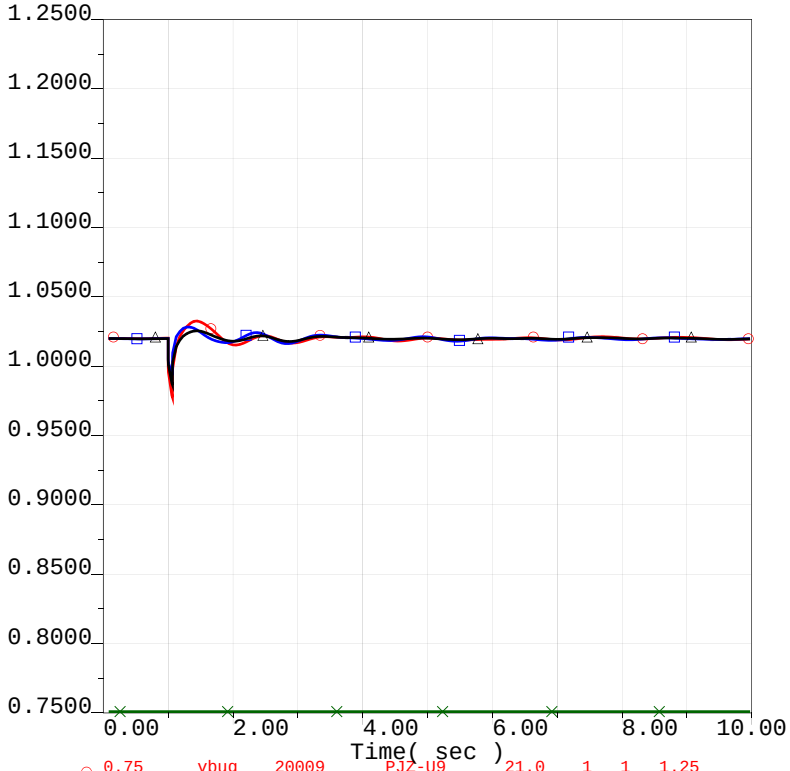
IVSG STUDY
2014 Heavy Summer Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

FBus Readings



IVSG STUDY
2014 Heavy Summer Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

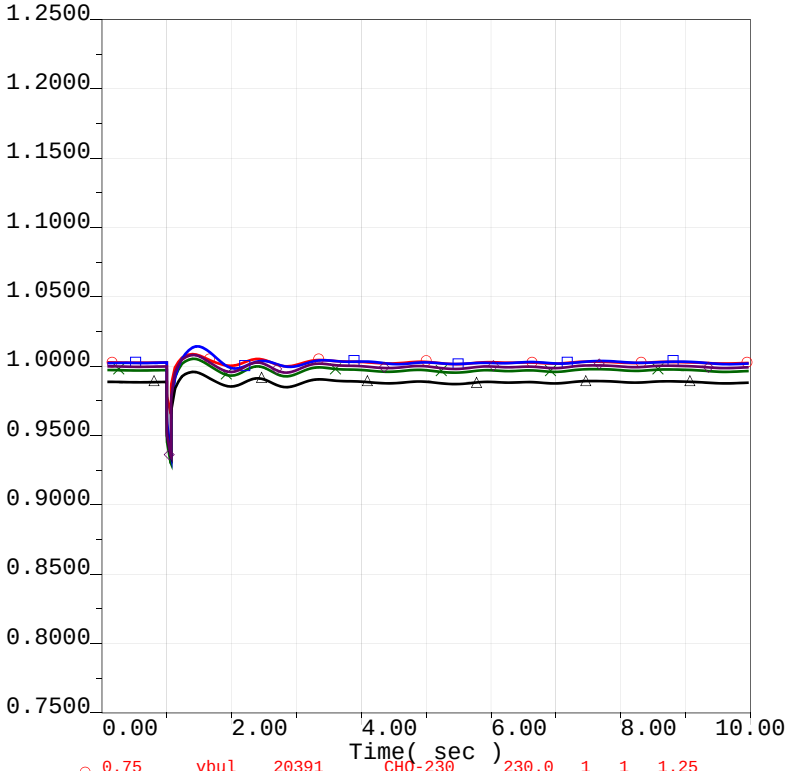
CFE Busses Page 1



○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

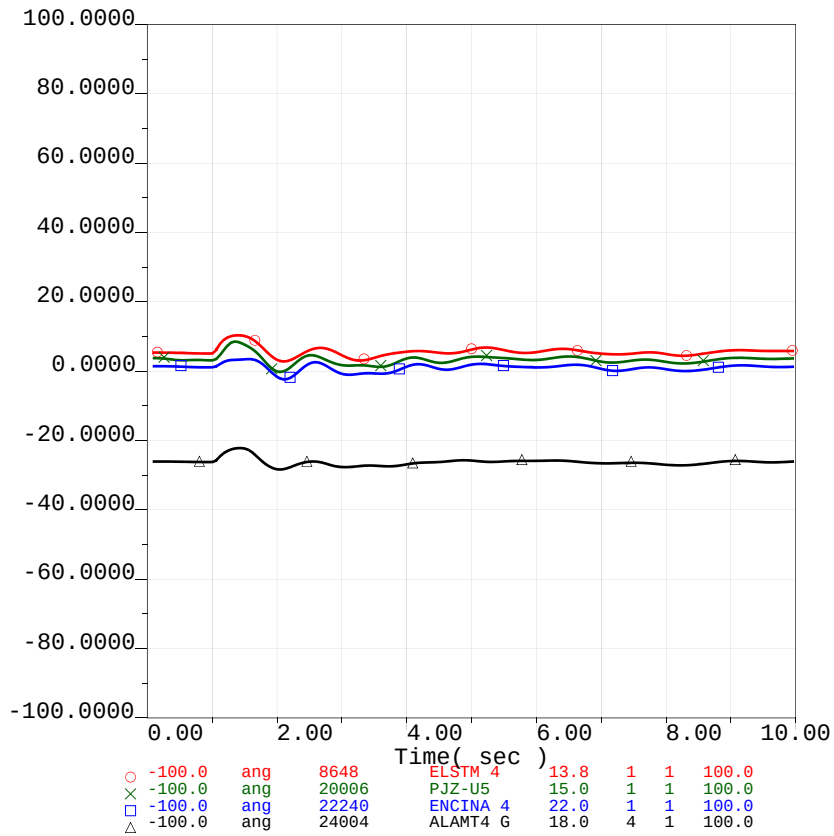
CFE Busses Page 2



○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

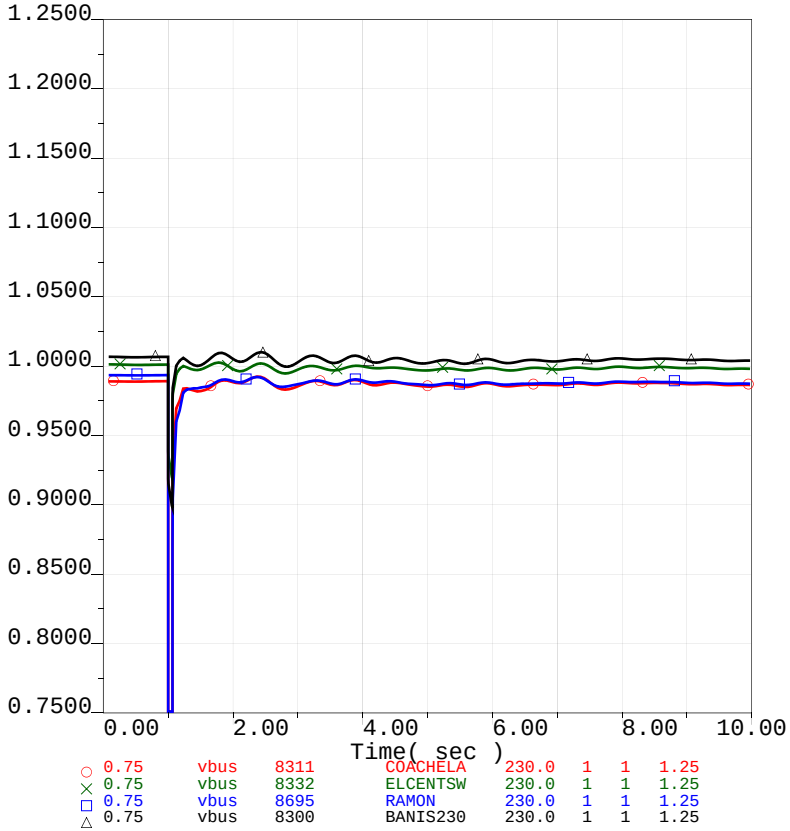
IVSG STUDY
2014 Heavy Summer Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

Rotor Angles for Gen Busses



IVSG STUDY
2014 Heavy Summer Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

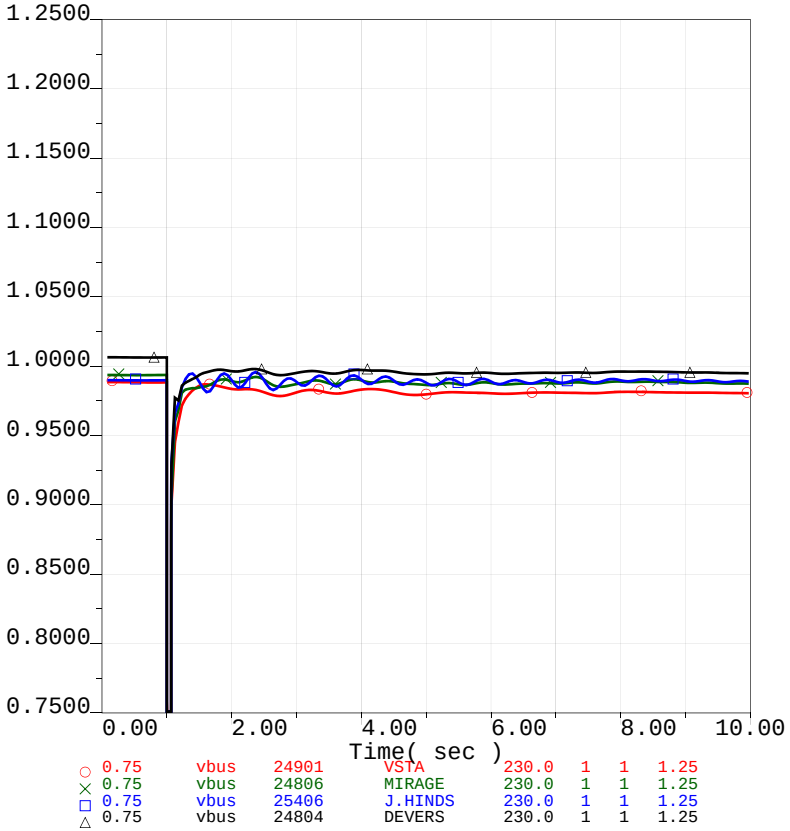
IID Busses



IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

deva | Wed Jun 08 12:46:27 2005

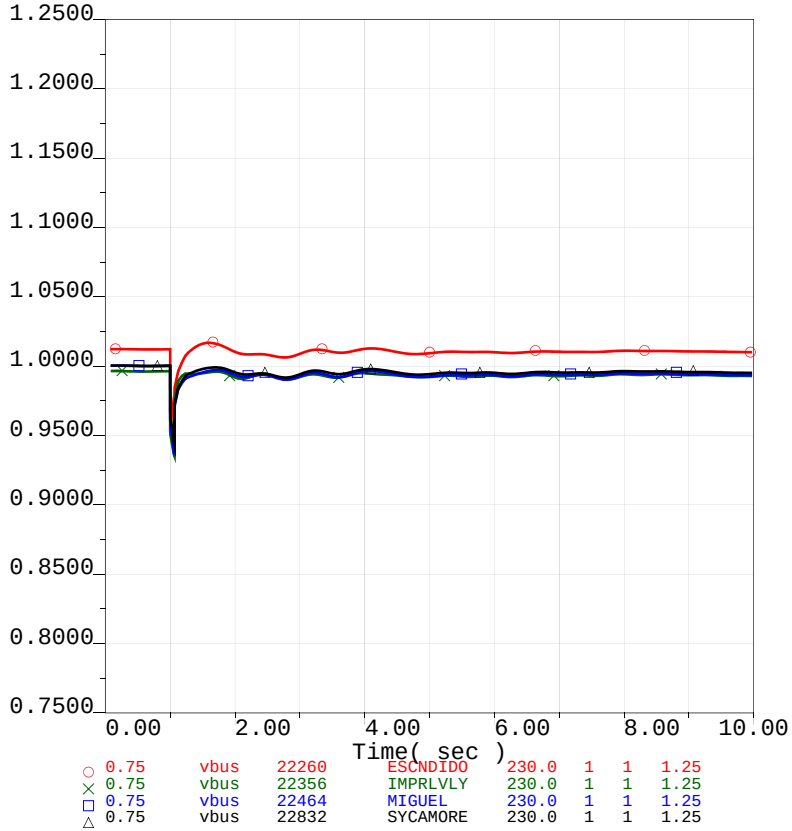
SCE Busses



IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

deva | Wed Jun 08 12:46:28 2005

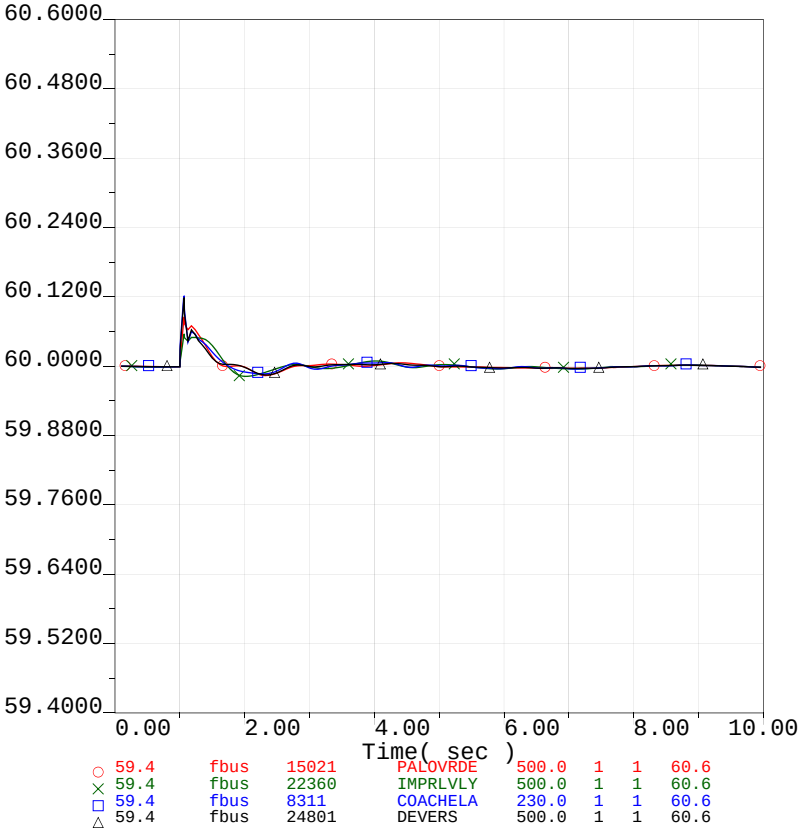
SDGE Busses



IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

deva | Wed Jun 08 12:46:29 2005

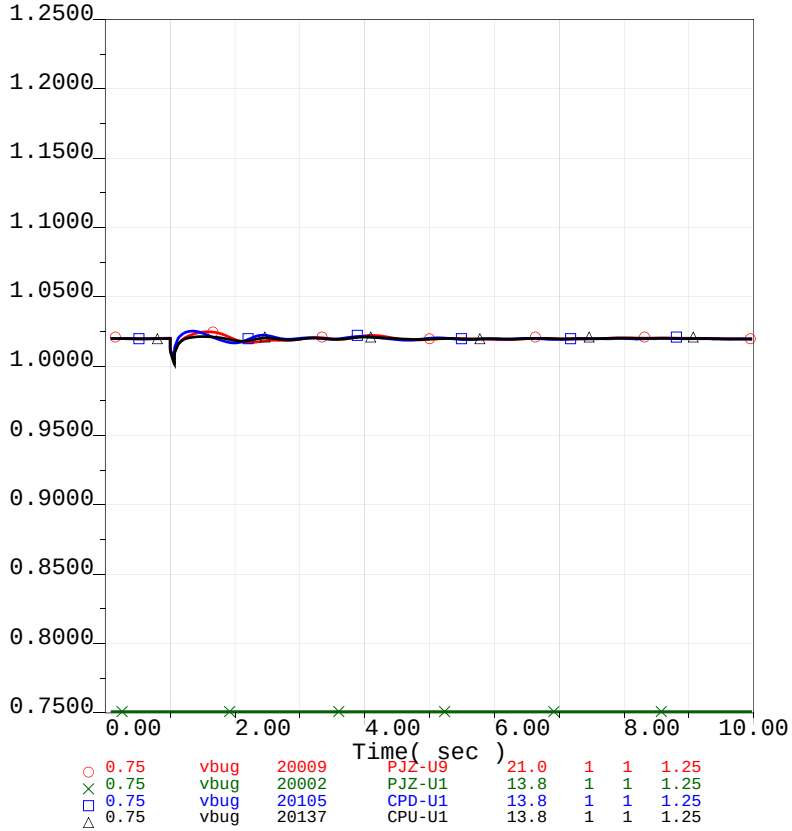
FBus Readings



IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

deva | Wed Jun 08 12:46:30 2005

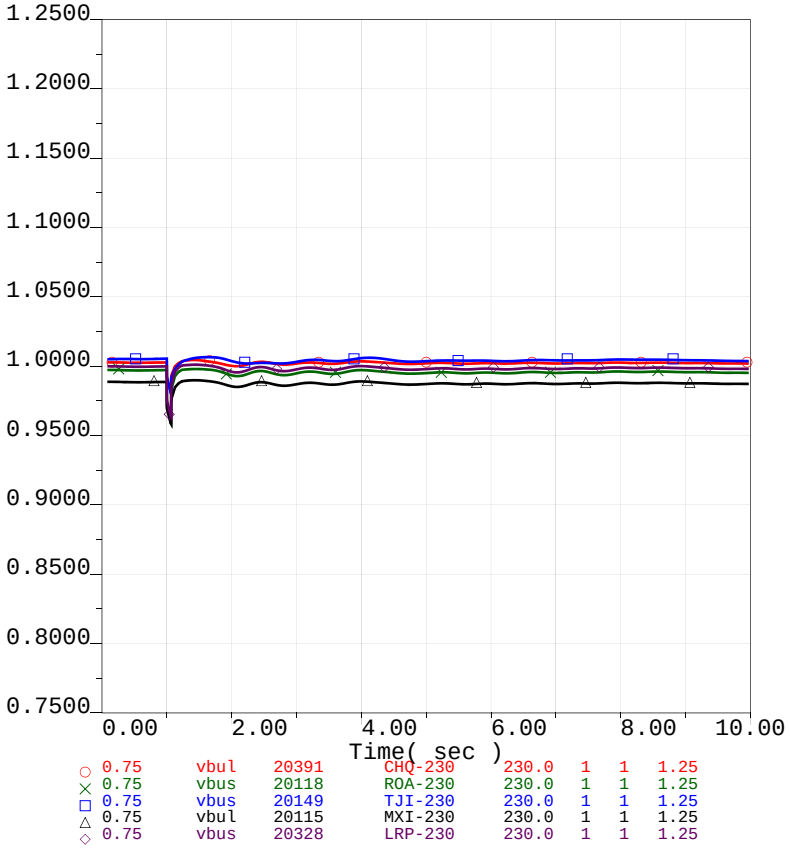
CFE Busses Page 1



IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

deva | Wed Jun 08 12:46:30 2005

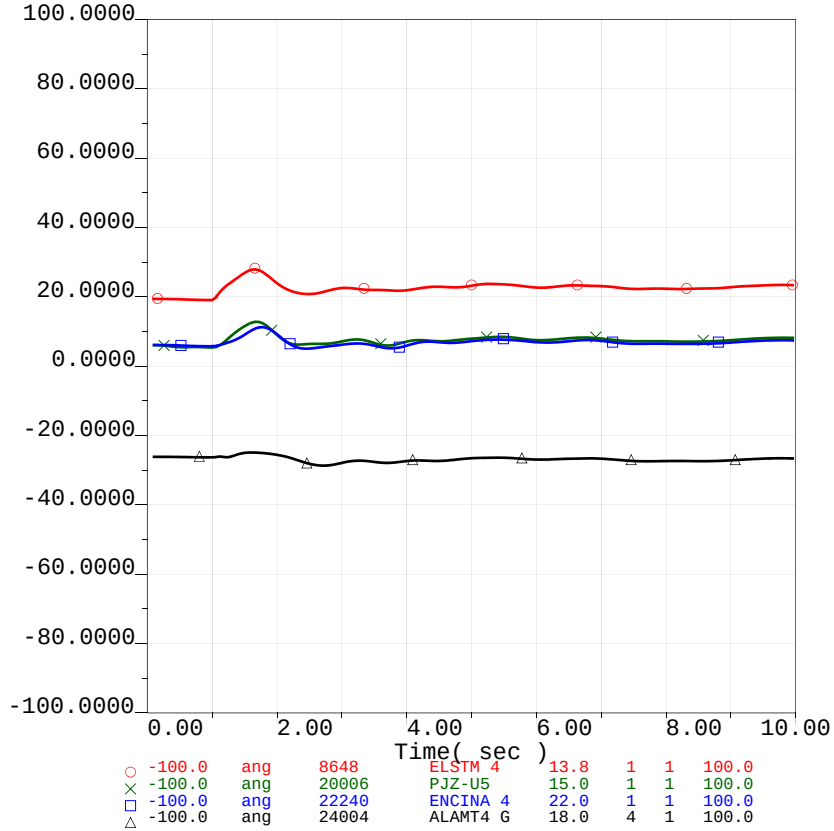
CFE Busses Page 2



IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

deva | Wed Jun 08 12:46:31 2005

Rotor Angles for Gen Busses

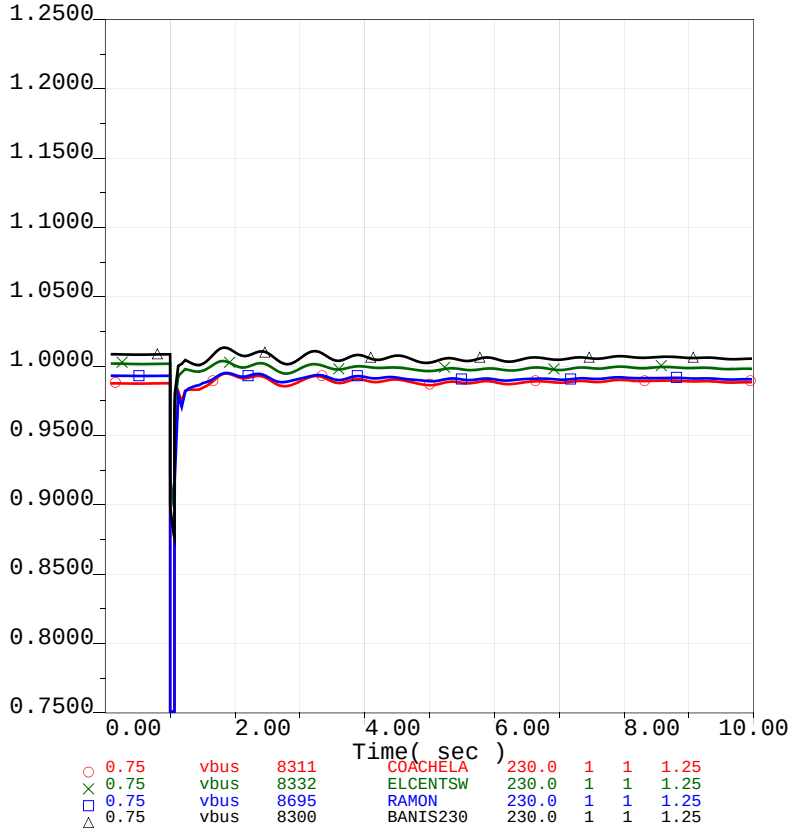


IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

deva

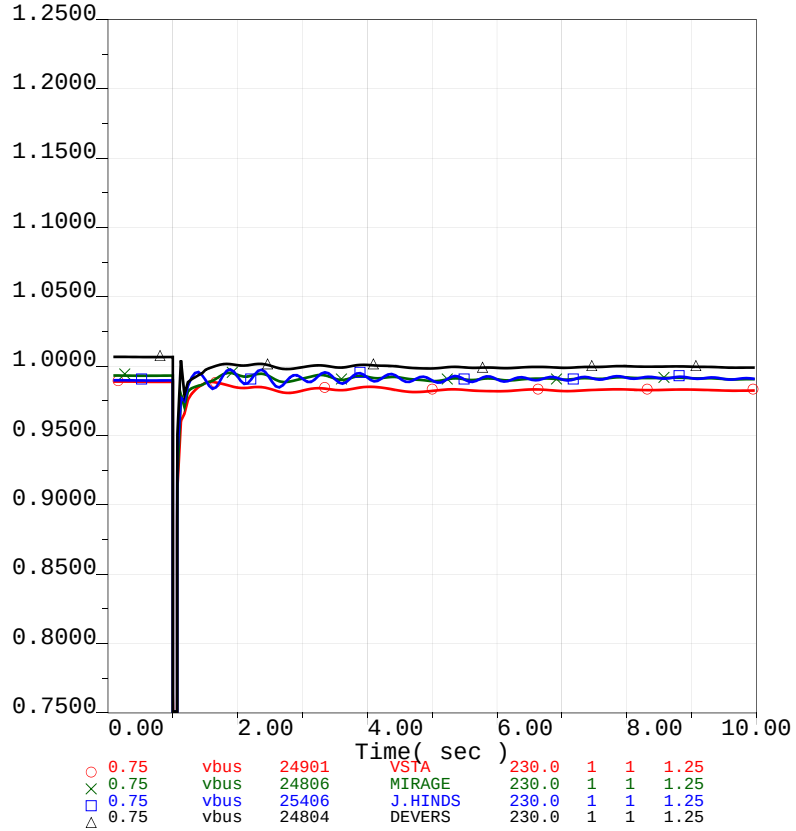
Wed Jun 08 12:46:32 2005

IID Busses



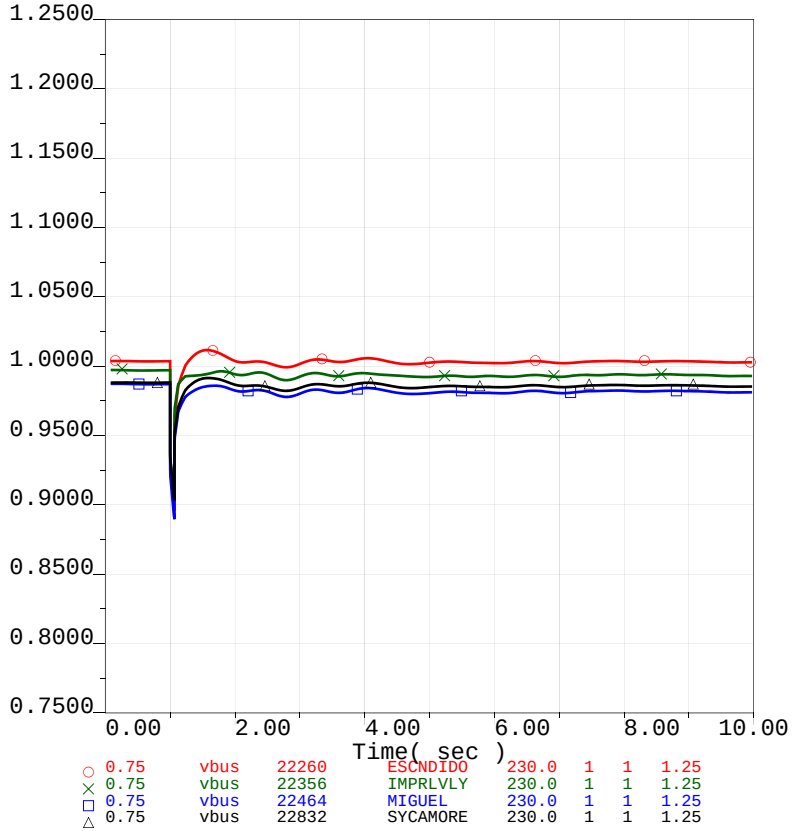
IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



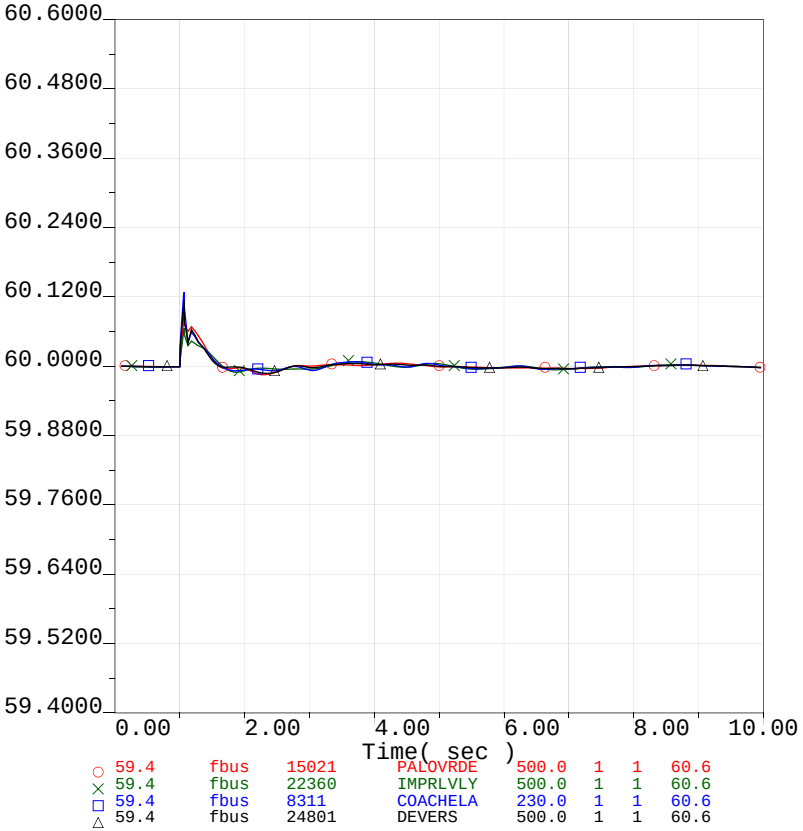
IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SDGE Busses



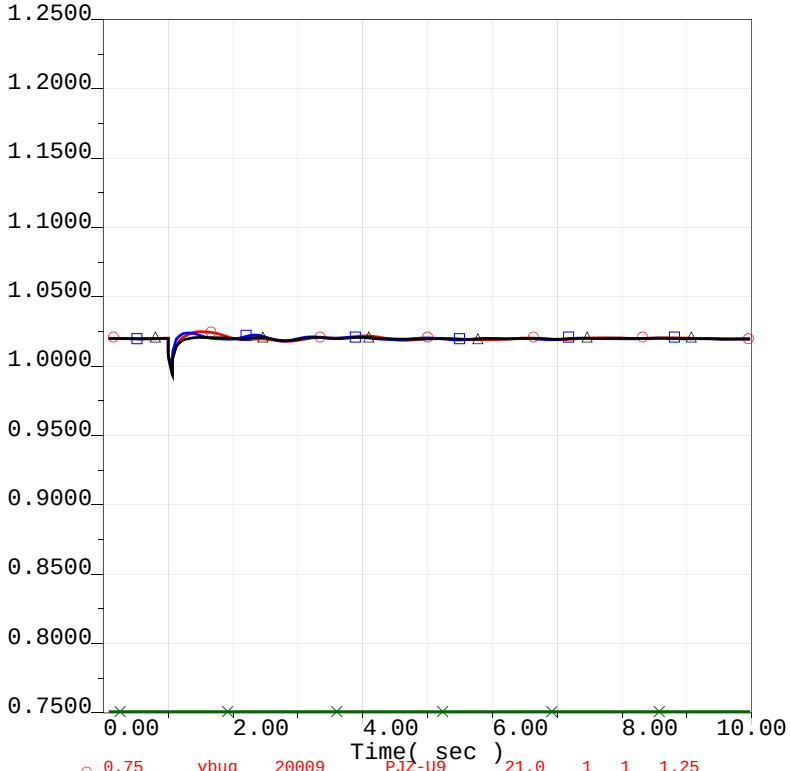
IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

FBus Readings



IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 1

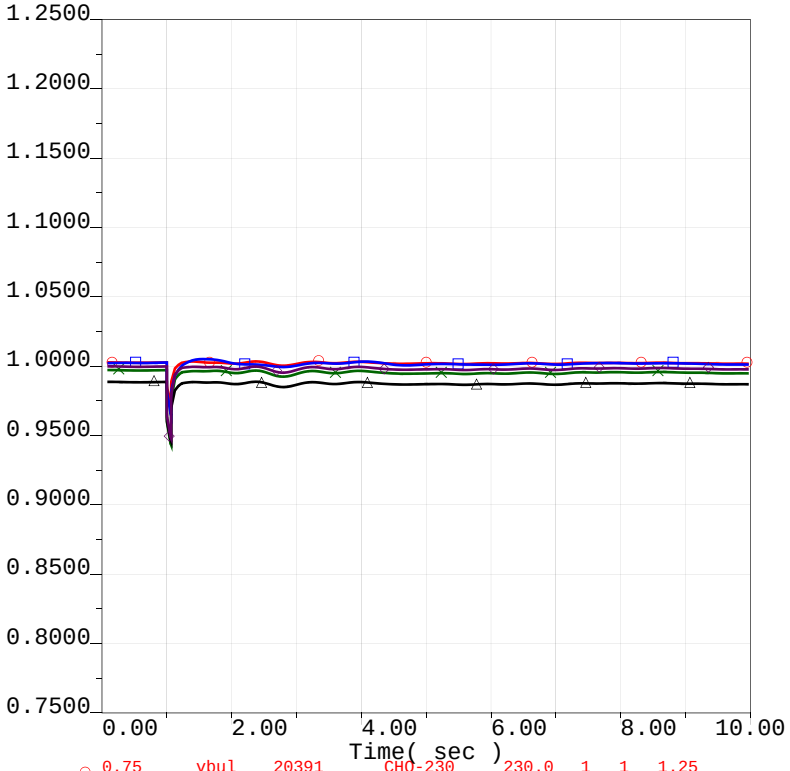


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hs_deva_alt3b | Wed Jun 08 12:49:28 2005

CFE Busses Page 2

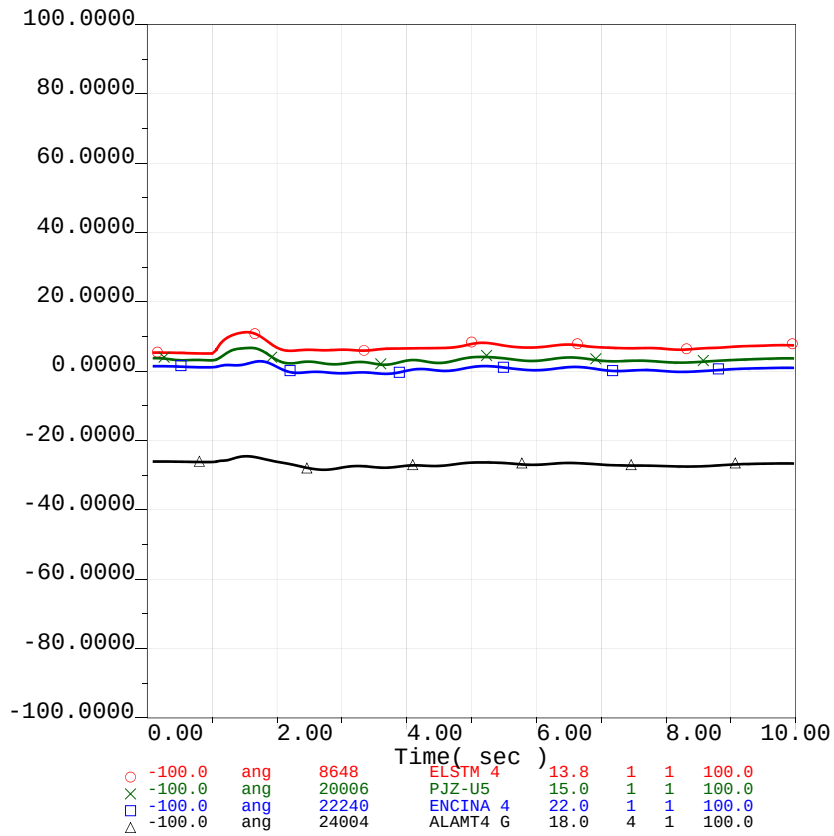


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

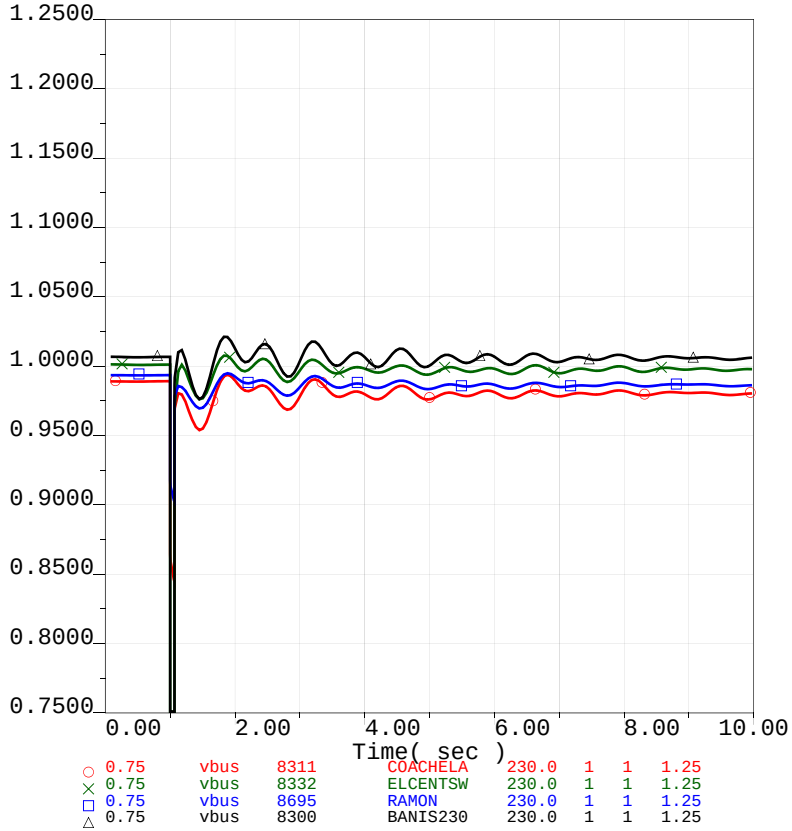
hs_deva_alt3b | Wed Jun 08 12:49:28 2005

Rotor Angles for Gen Busses



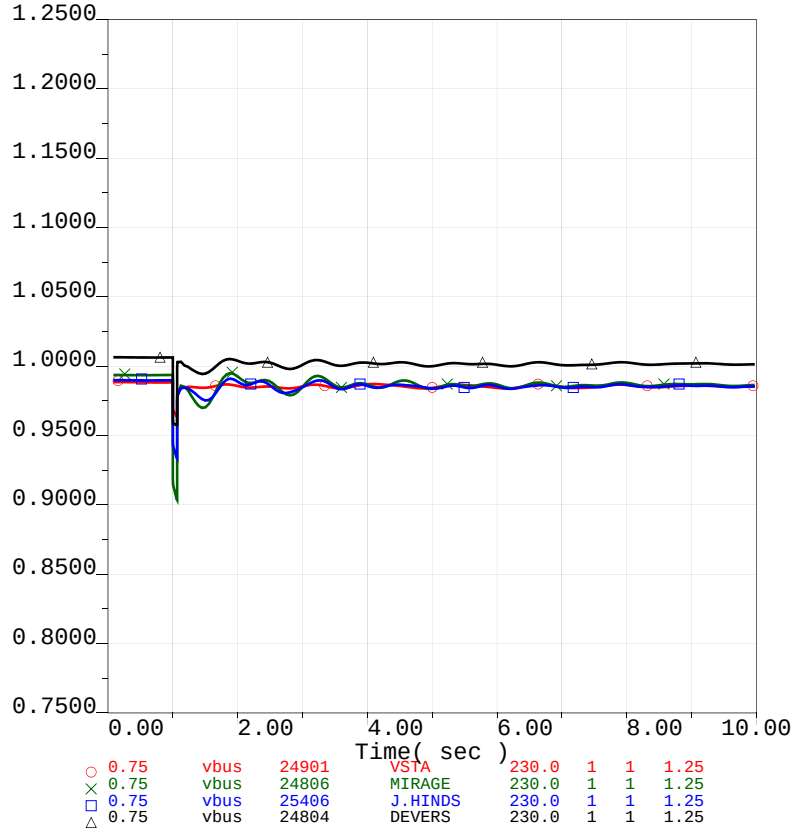
IVSG STUDY
2014 Heavy Summer Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

IID Busses



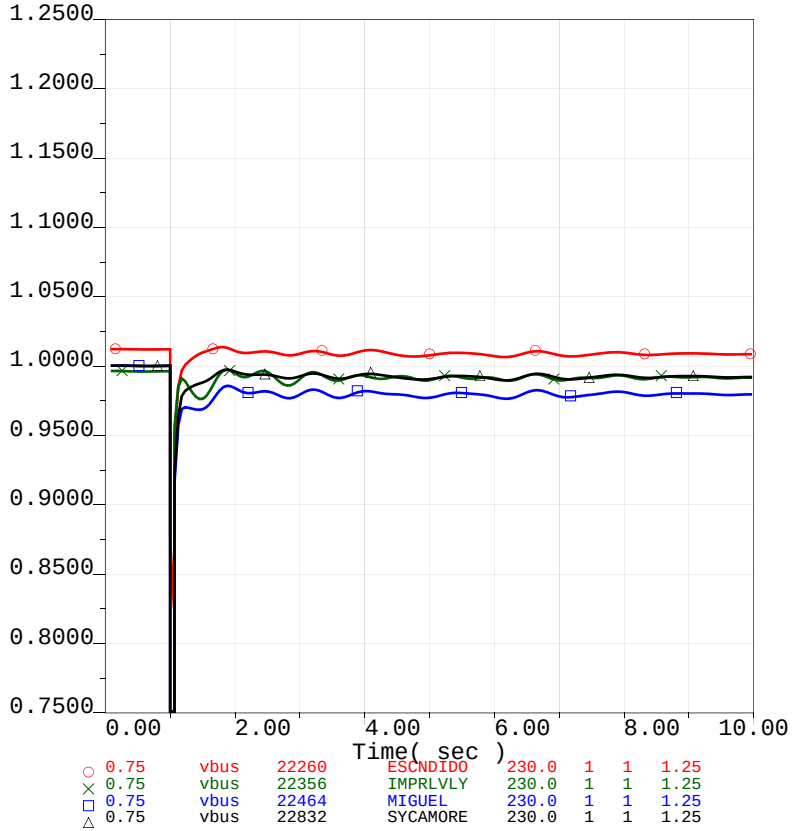
IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

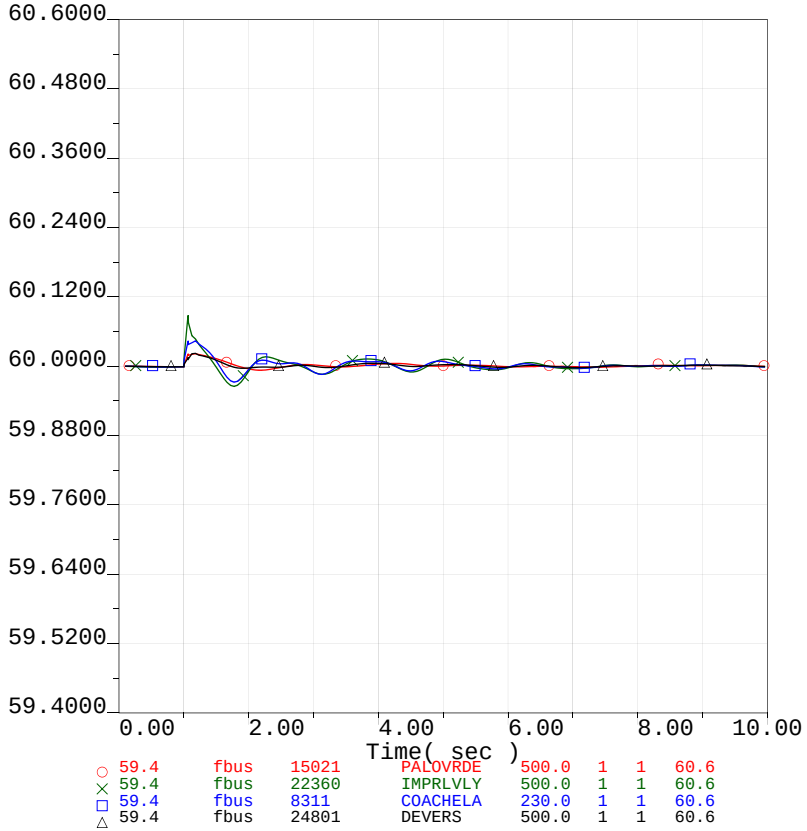
SDGE Busses



IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

nsfc | Wed Jun 08 12:59:00 2005

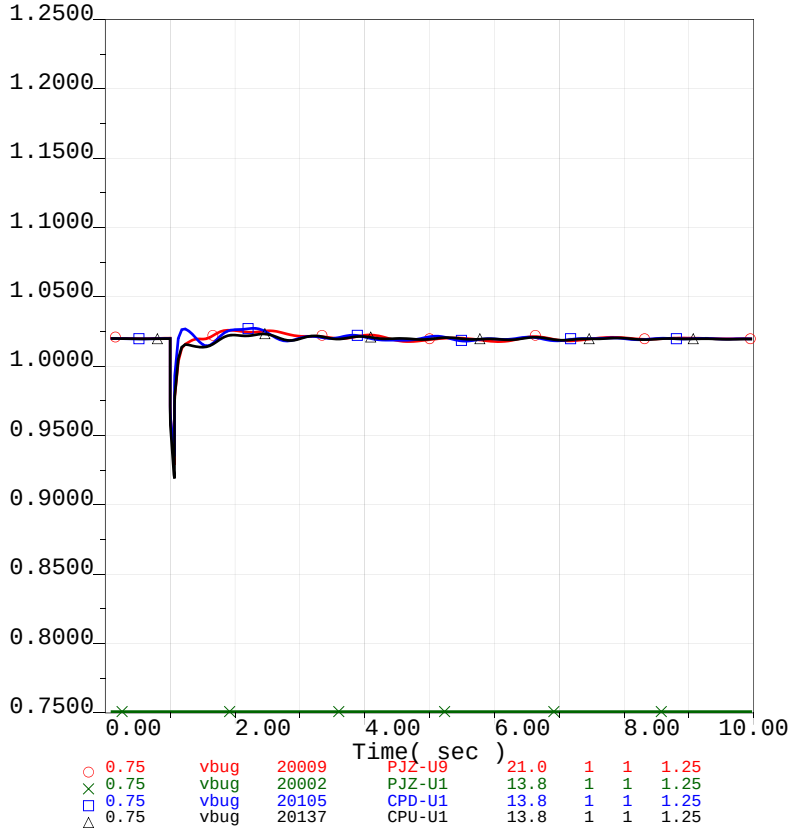
FBus Readings



IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

nsfc | Wed Jun 08 12:59:01 2005

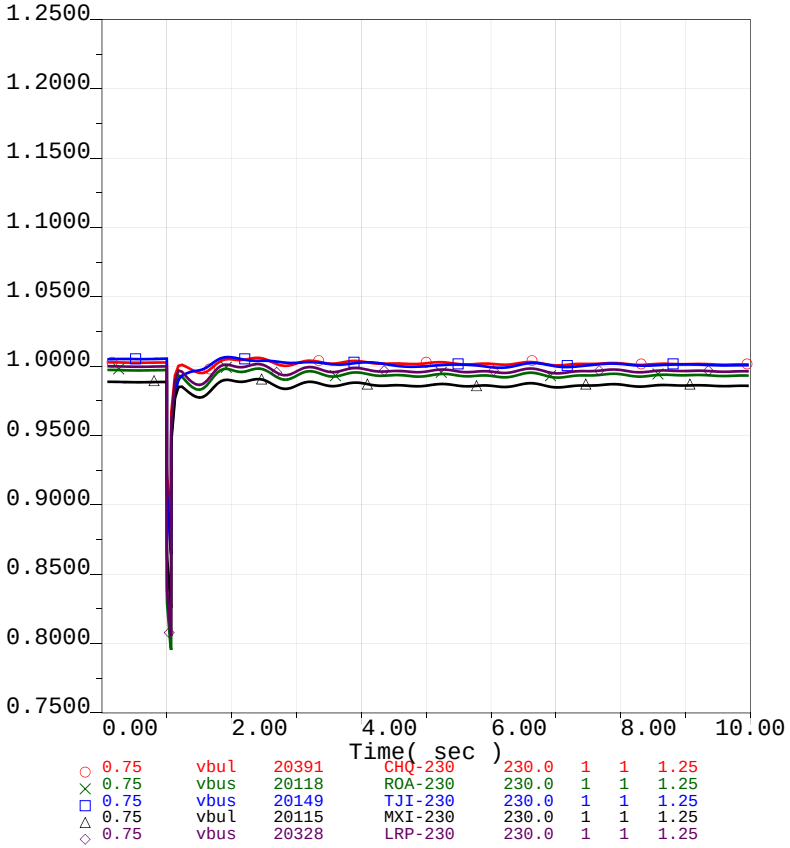
CFE Busses Page 1



IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

nsfc | Wed Jun 08 12:59:01 2005

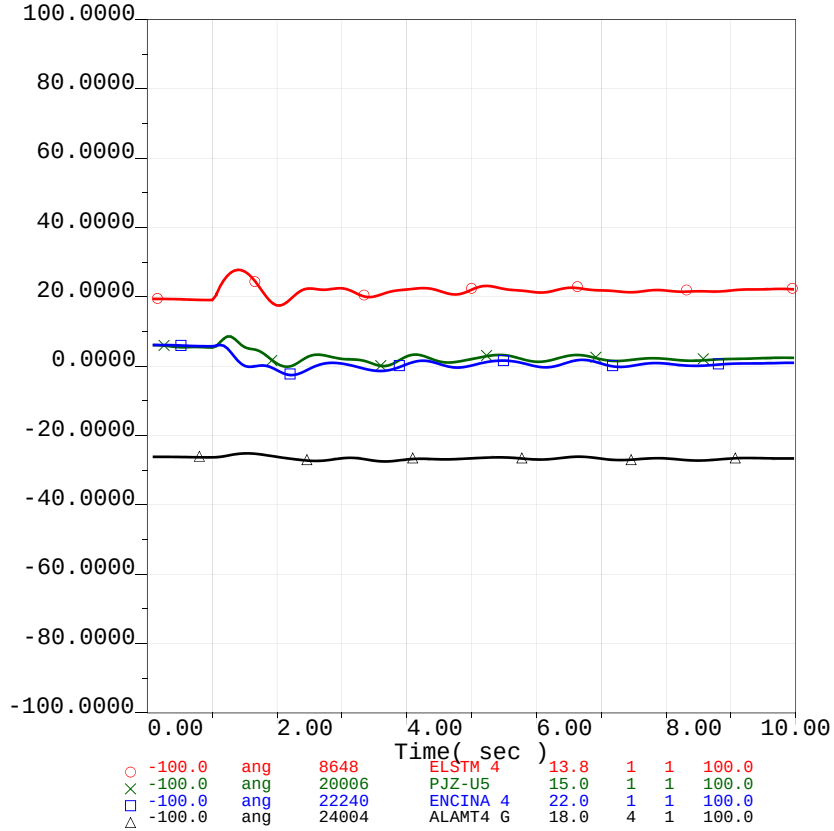
CFE Busses Page 2



IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

nsfc | Wed Jun 08 12:59:02 2005

Rotor Angles for Gen Busses

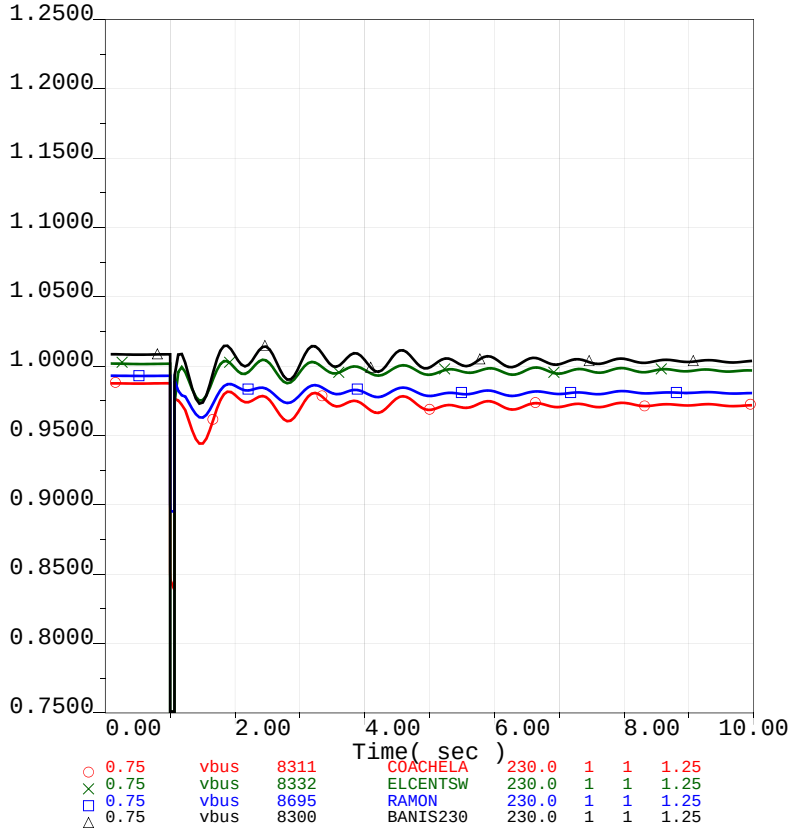


IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

nsfc

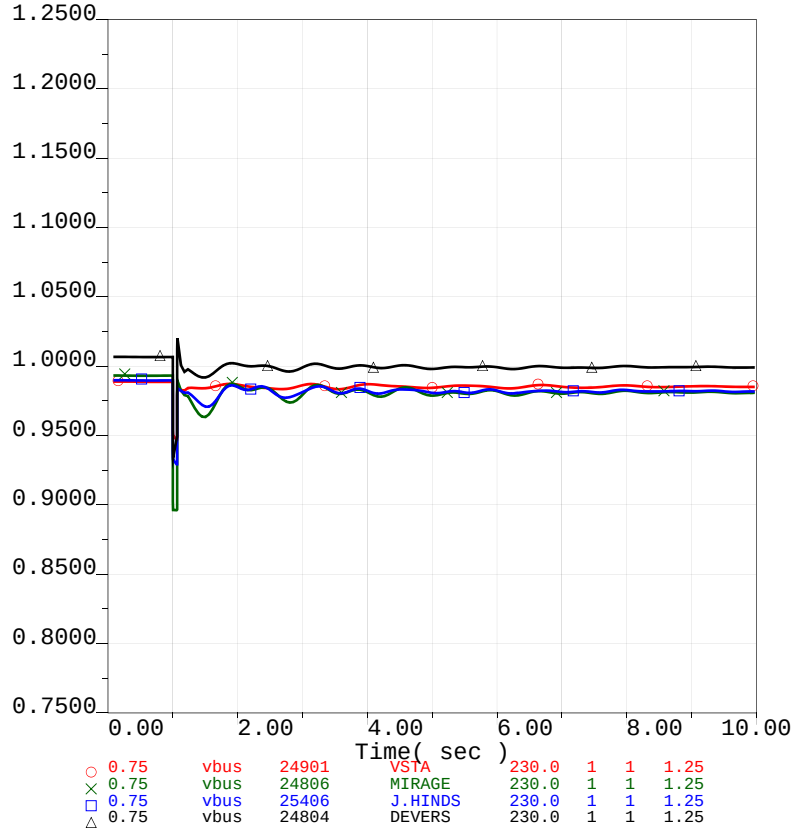
Wed Jun 08 12:59:03 2005

IID Busses



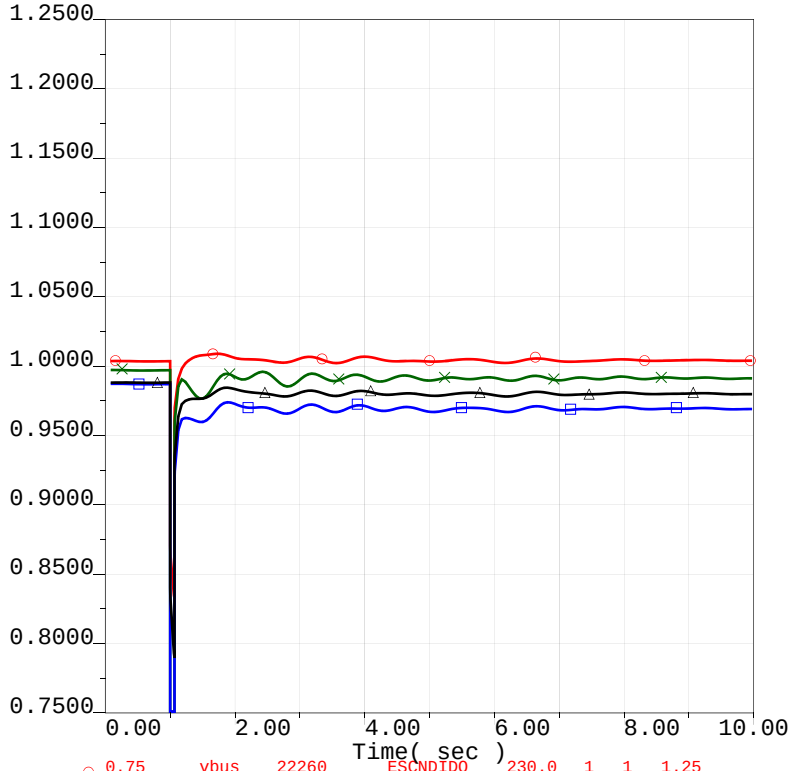
IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

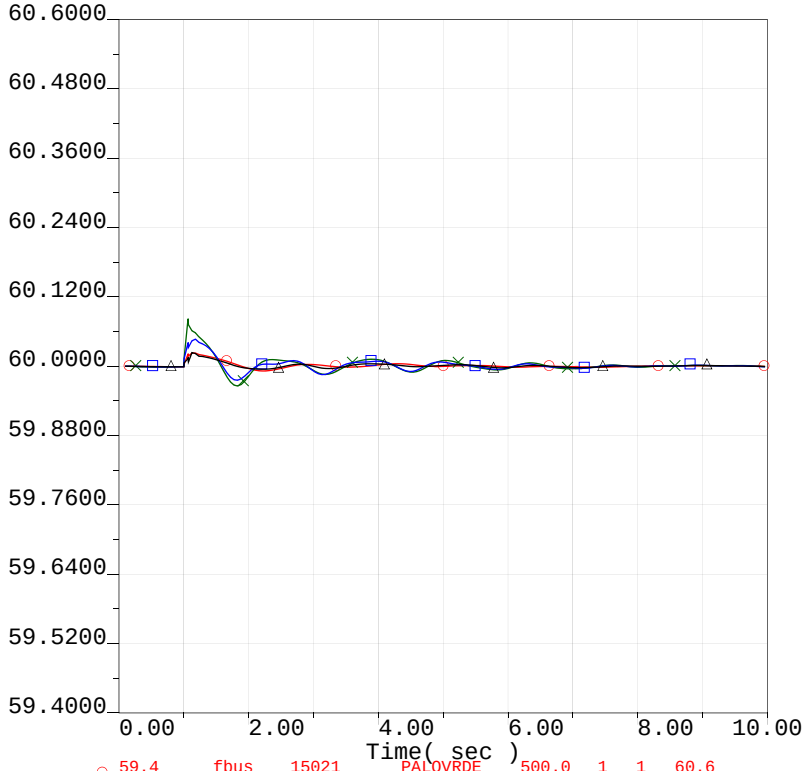
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

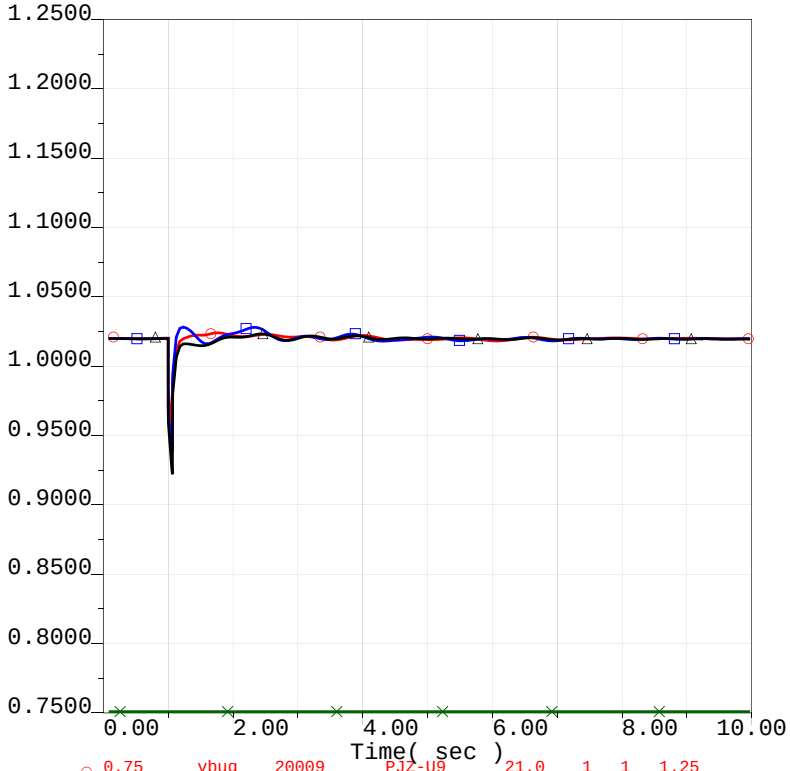
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

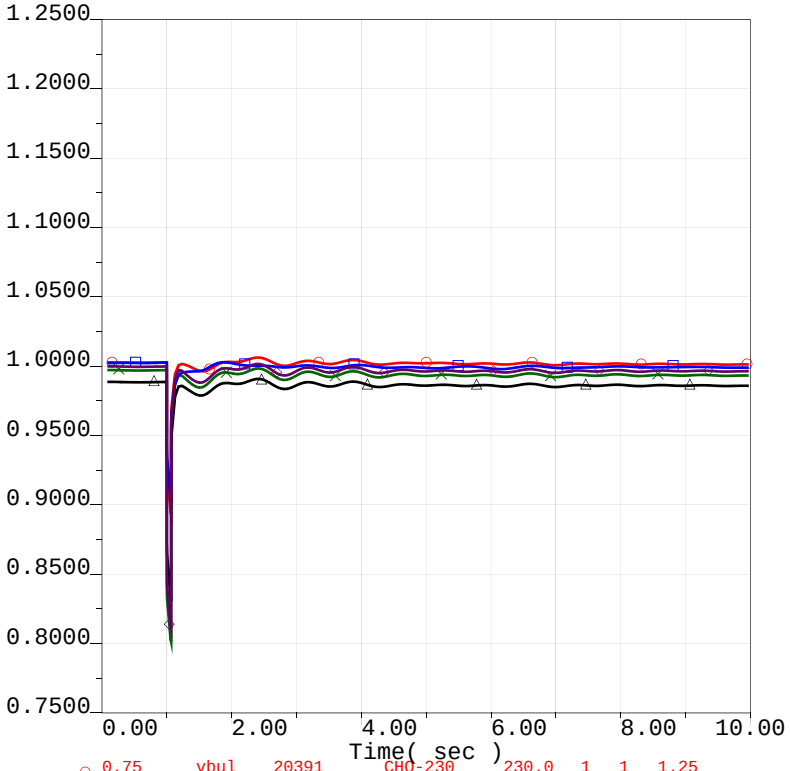
CFE Busses Page 1



○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

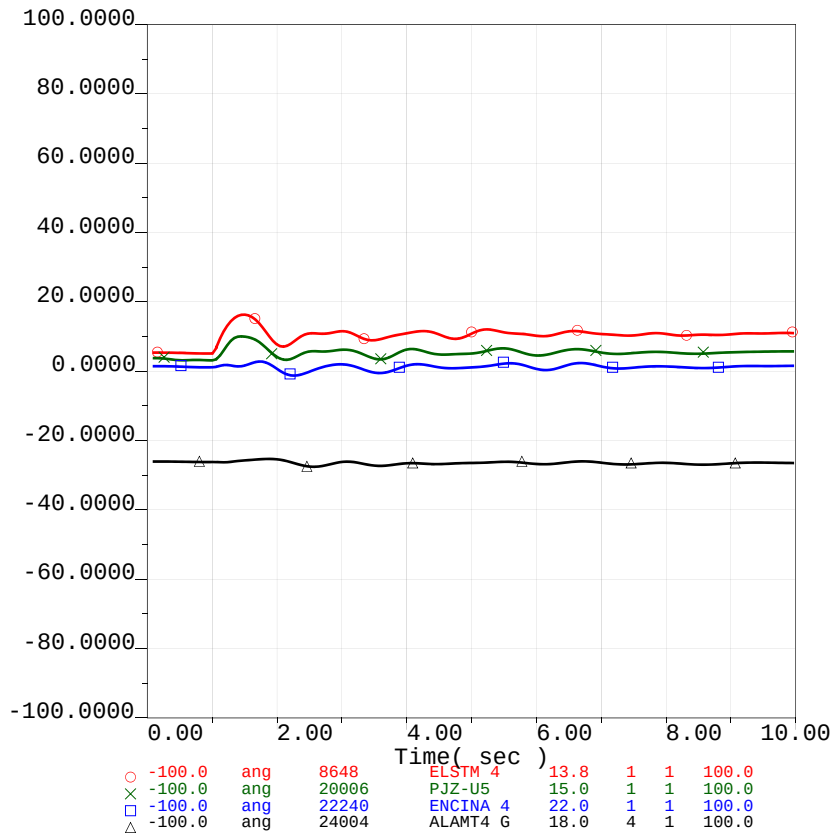
CFE Busses Page 2



○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

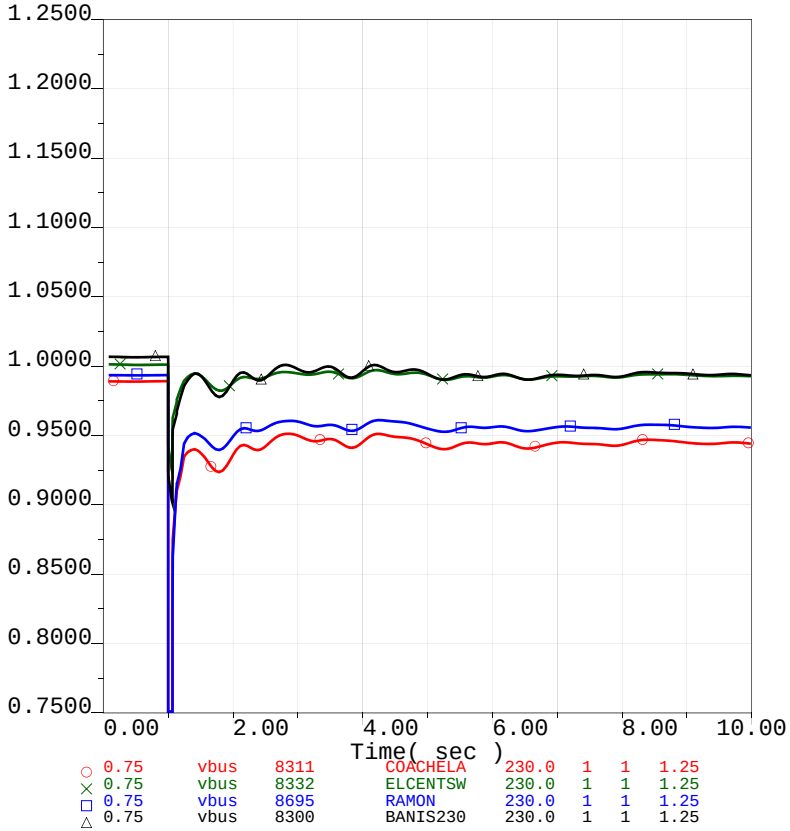
IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

Rotor Angles for Gen Busses



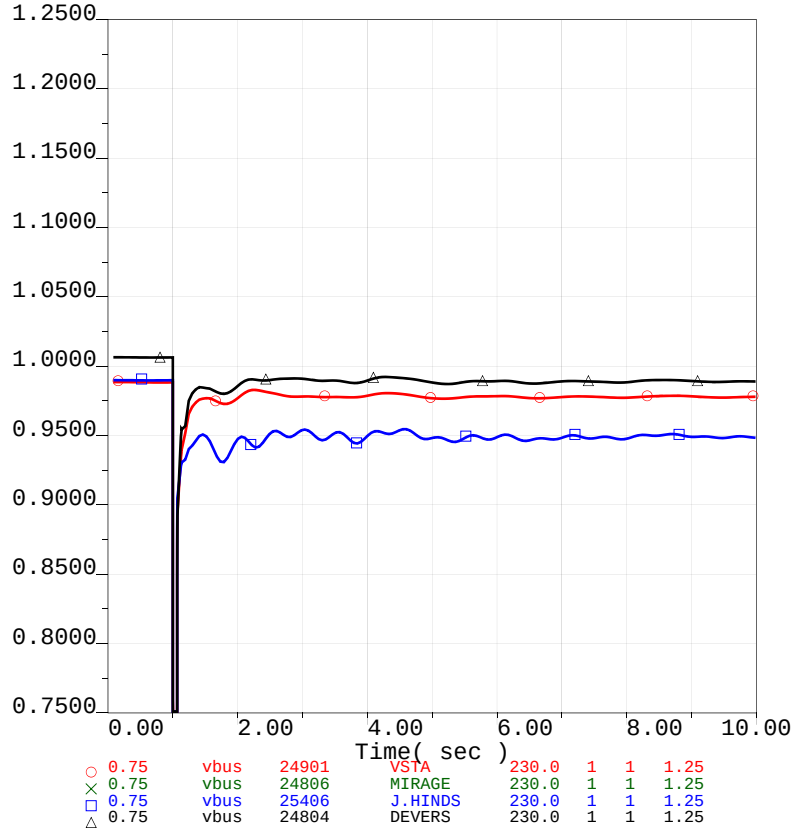
IVSG STUDY
2014 Heavy Summer Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

IID Busses



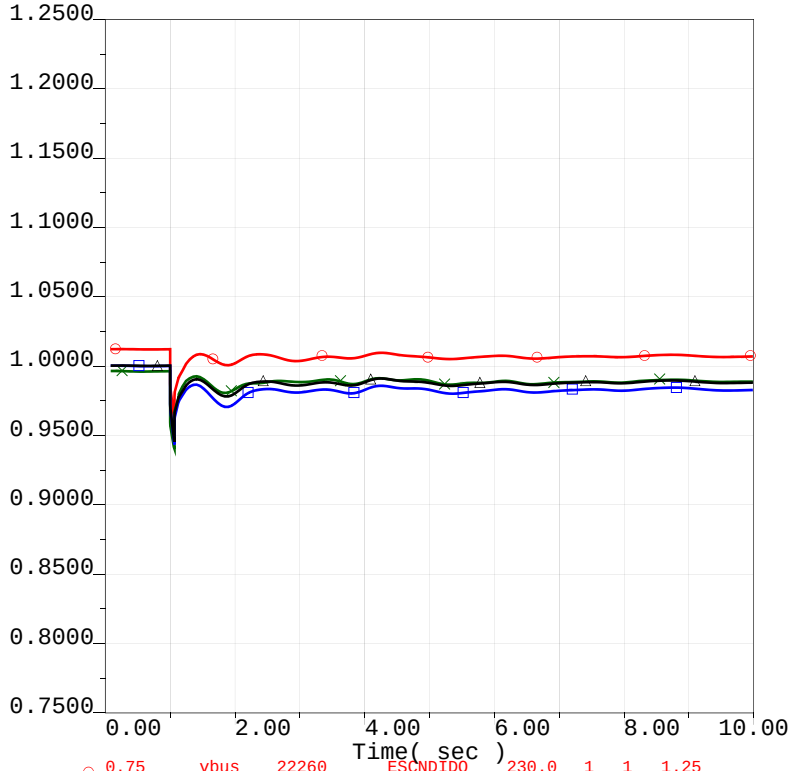
IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

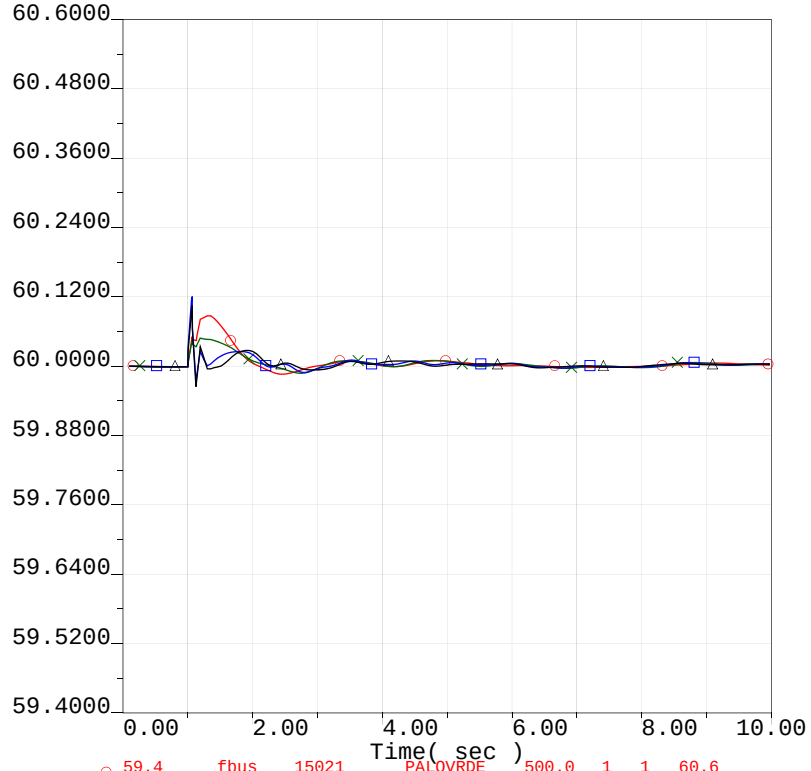
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

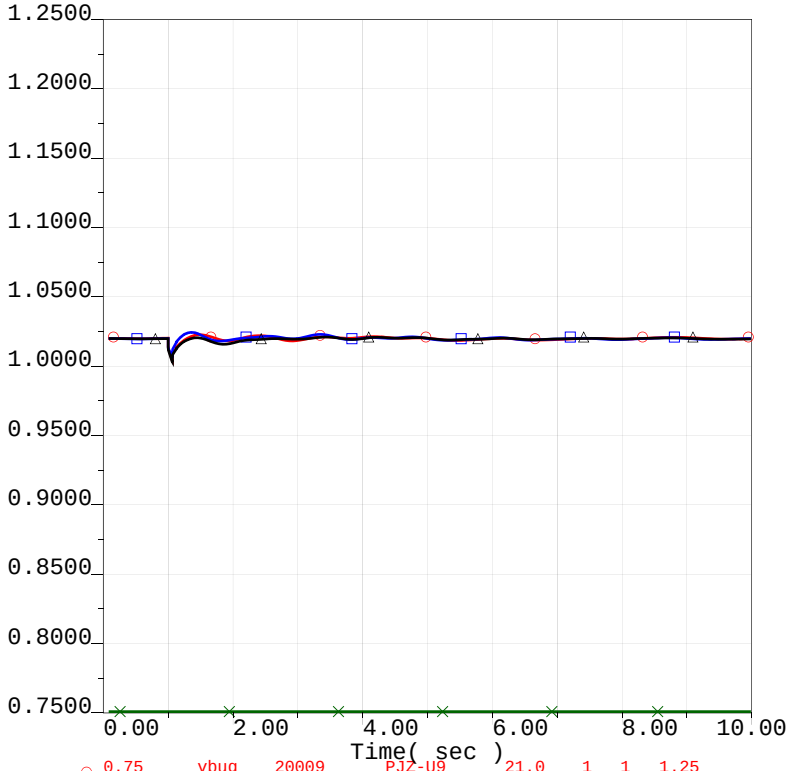
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 1

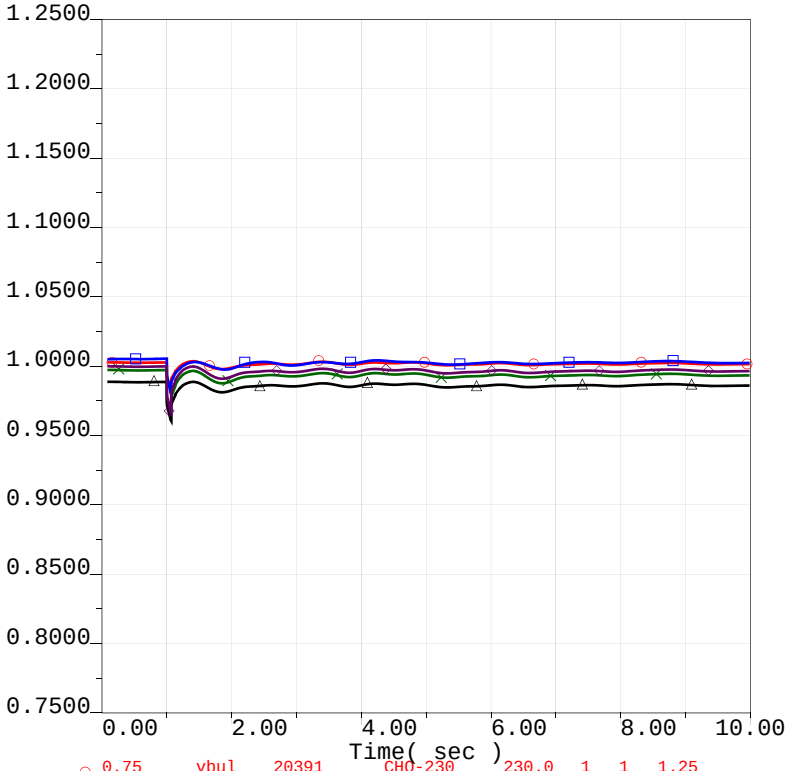


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

hs_pvdv_alt2 | Wed Jun 08 12:44:14 2005

CFE Busses Page 2

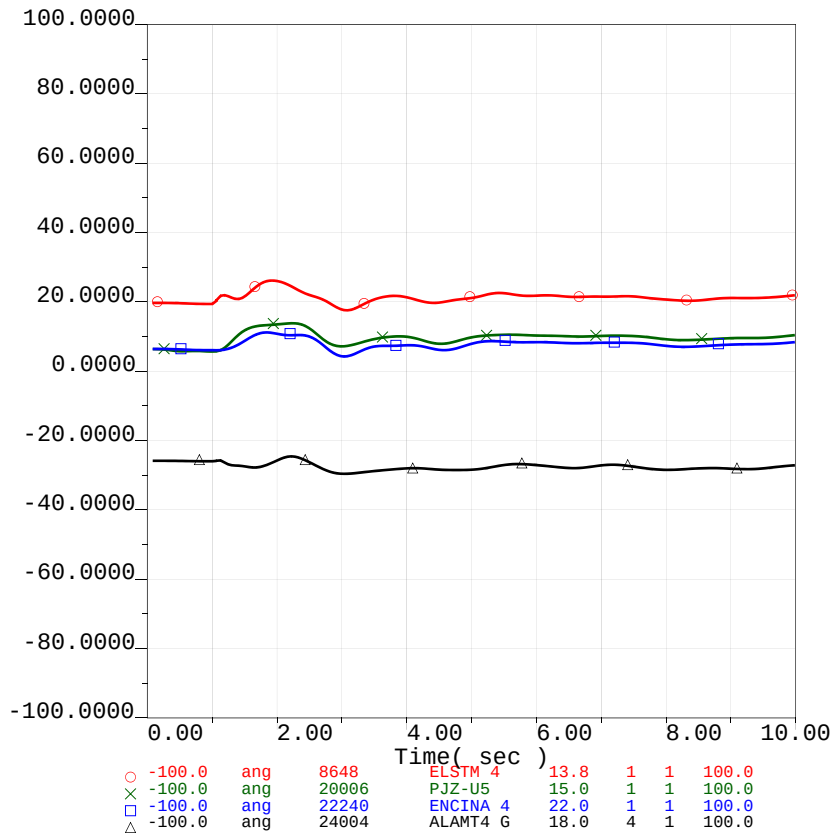


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

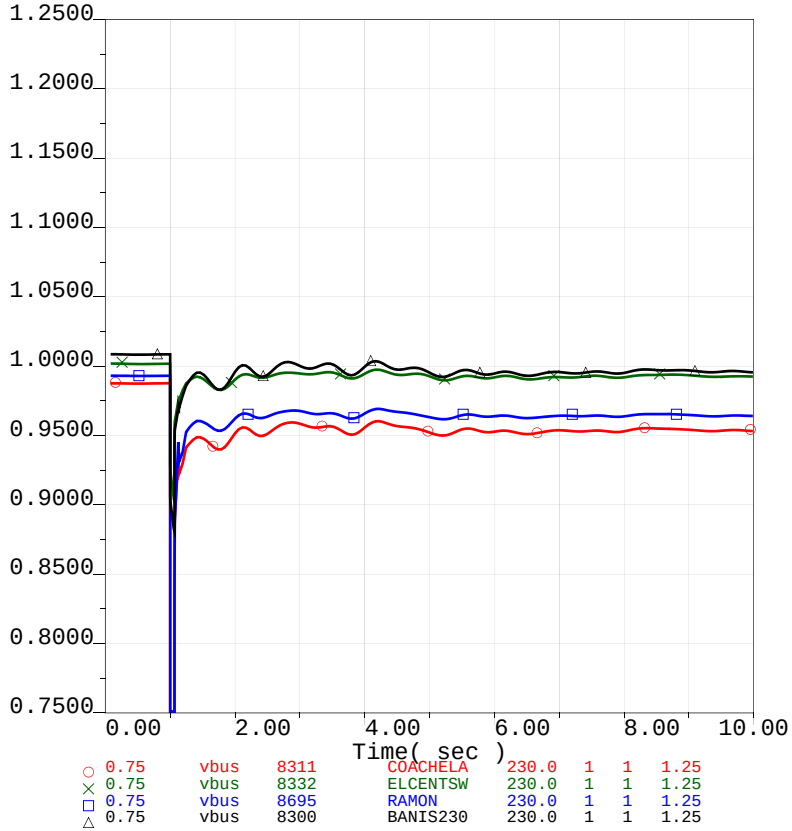
hs_pvdv_alt2 | Wed Jun 08 12:44:15 2005

Rotor Angles for Gen Busses



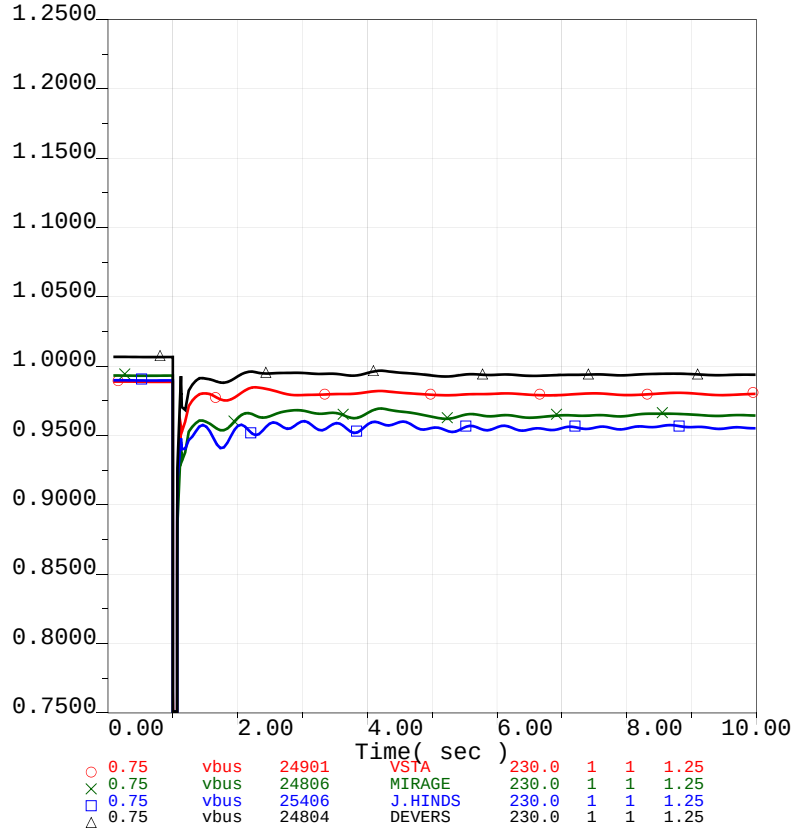
IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 2 DISPATCH 1
ALTERNATIVE 2 HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

IID Busses



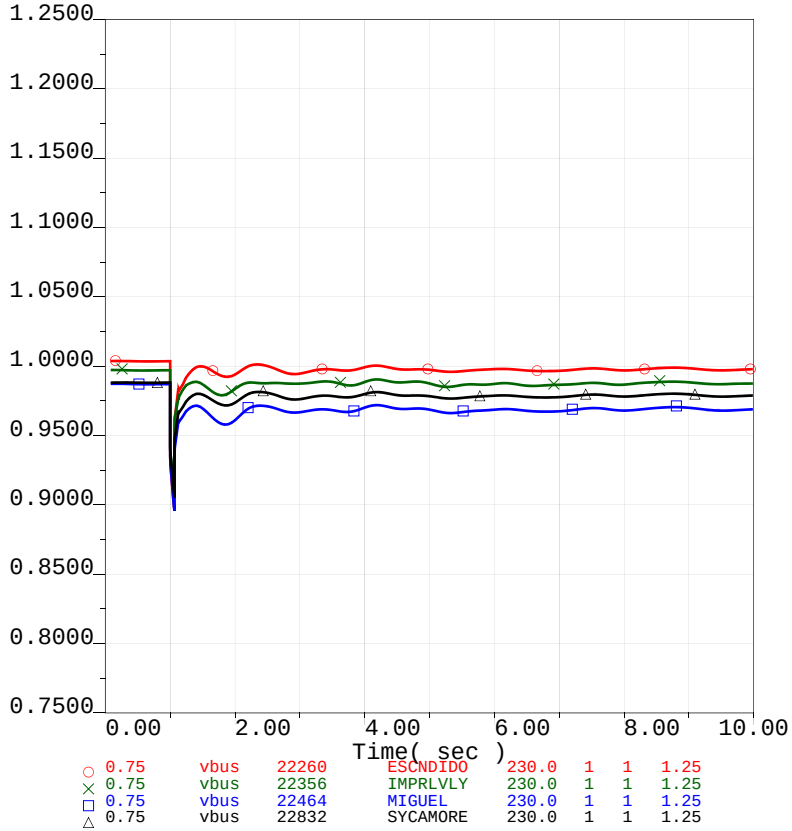
IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SCE Busses



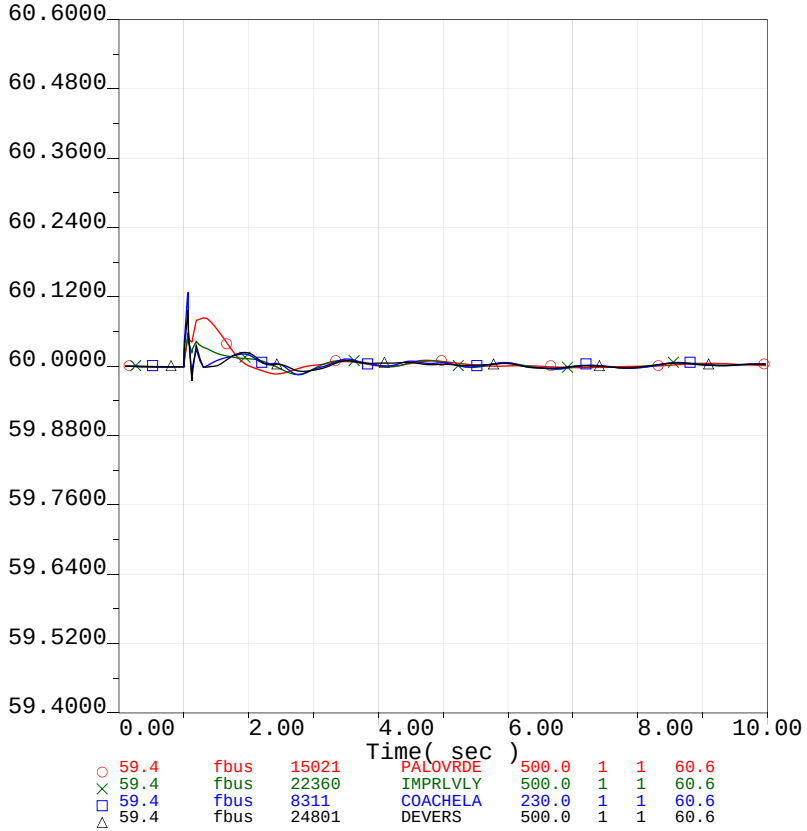
IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

SDGE Busses



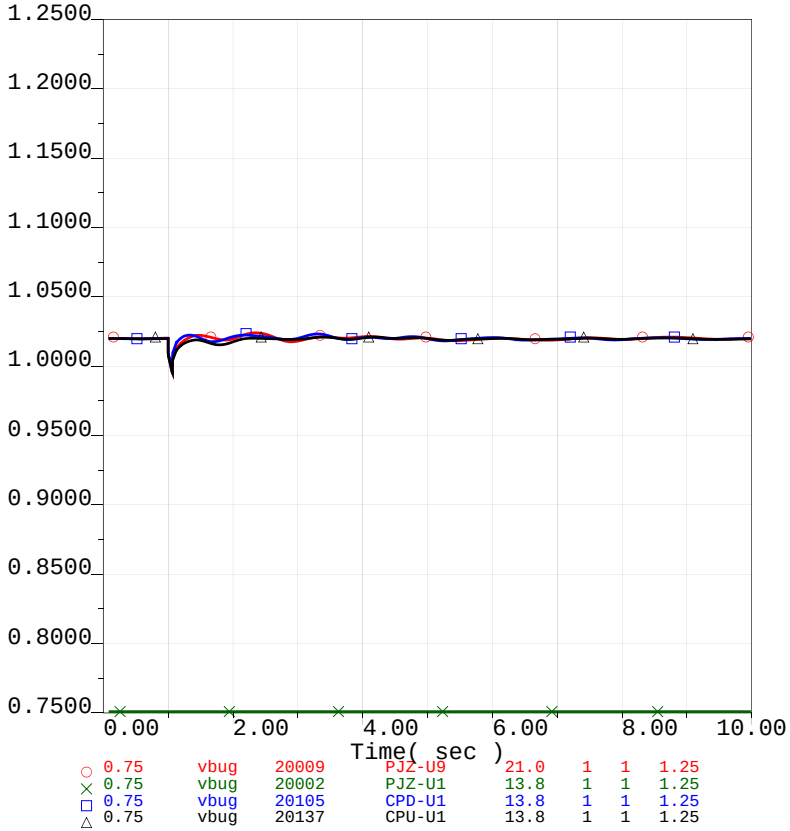
IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

FBus Readings



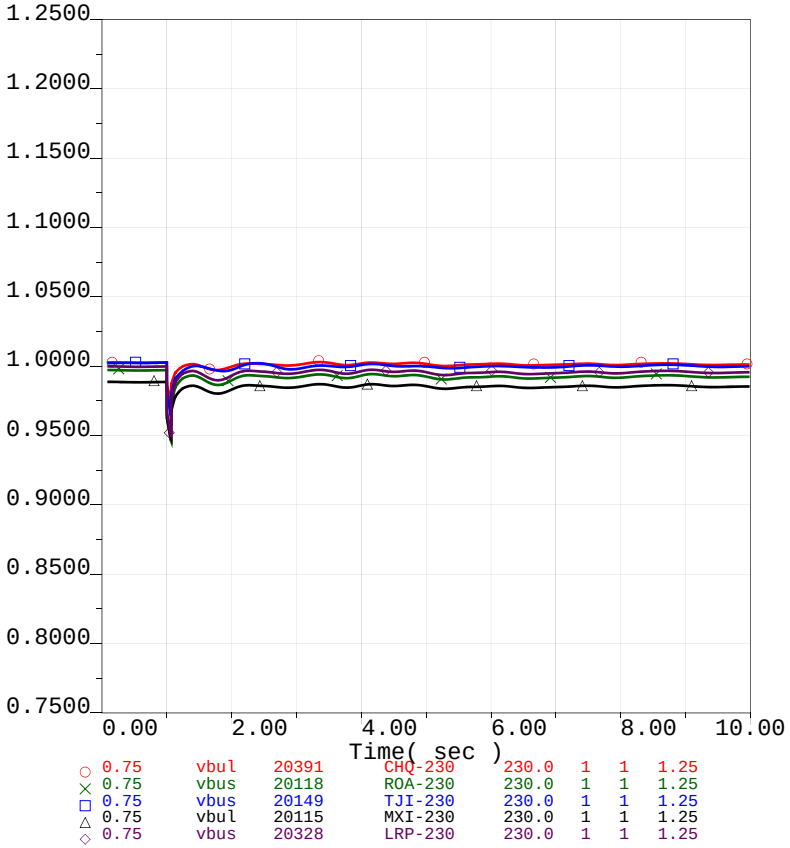
IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 1



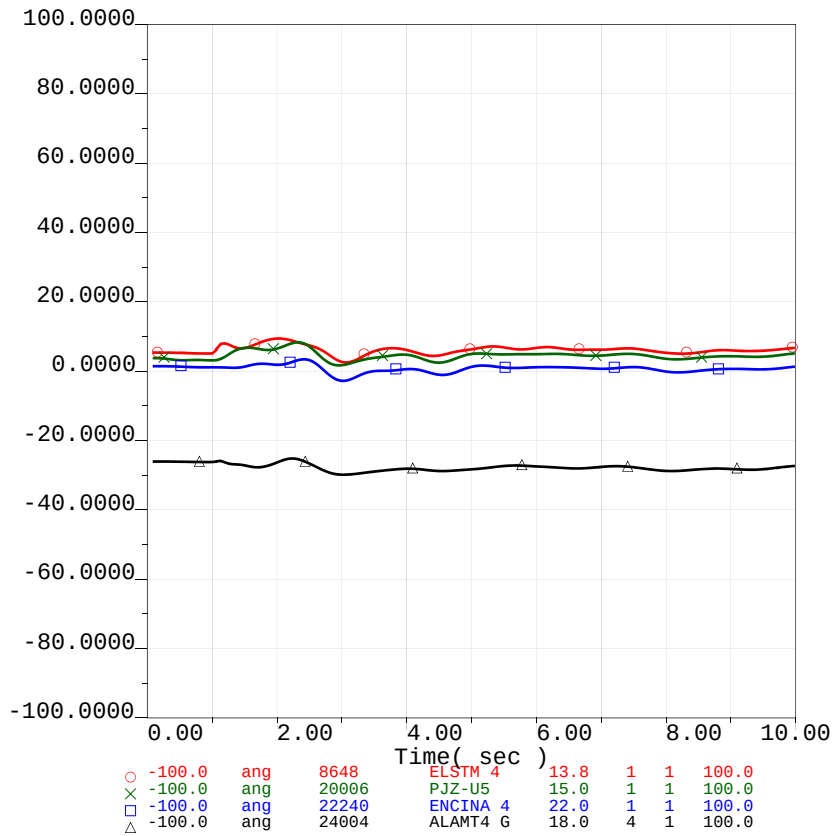
IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

CFE Busses Page 2



IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

Rotor Angles for Gen Busses



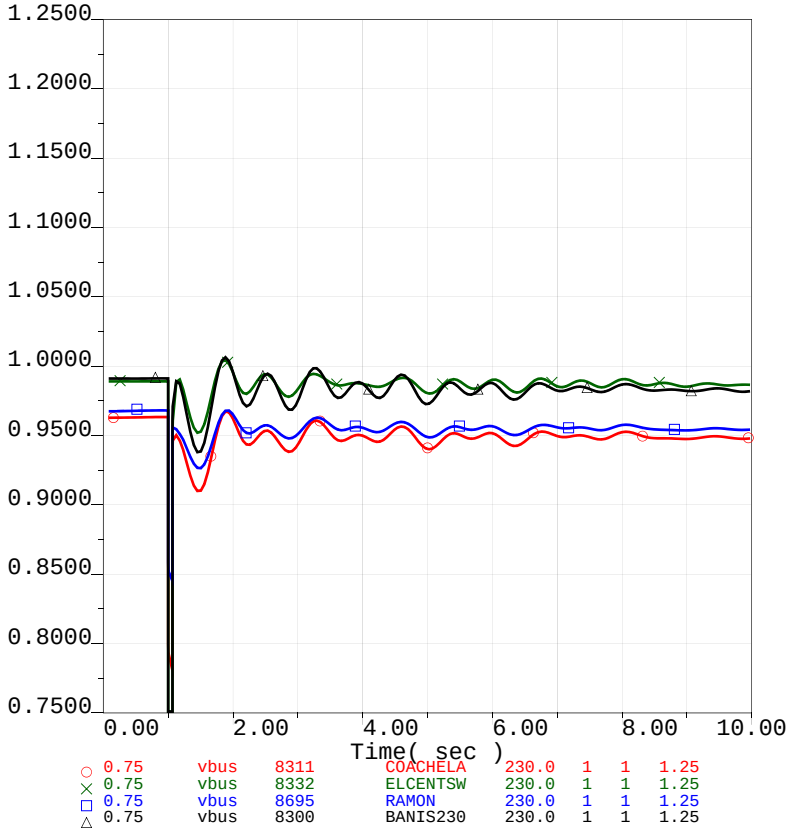
IVSG STUDY
2014 Heavy Summer Case
N-2 PV-Devers HARQ-DEVERS 500 kV
Case ALT 3B DISPATCH 1
ALTERNATIVE 3B HEAVY SUMMER BASE CASE, DISPATCH SCENARIO 1

Imperial Valley Study Group

Appendix C.1.2

Light Autumn

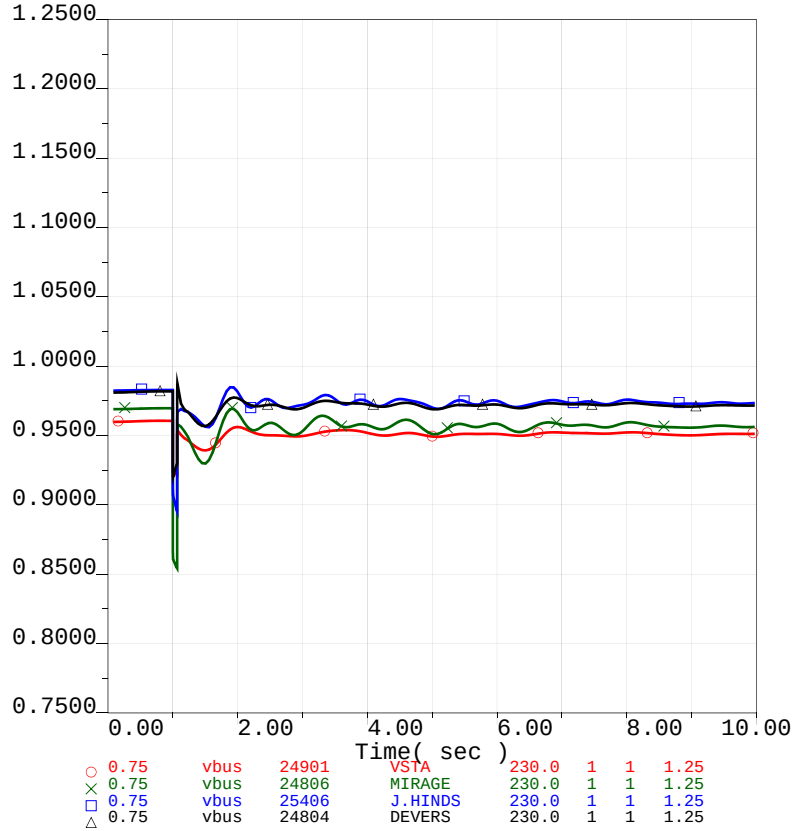
IID Busses



IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 3

la_ivml_noras_alt2 | Wed Jun 08 14:20:19 2005

SCE Busses



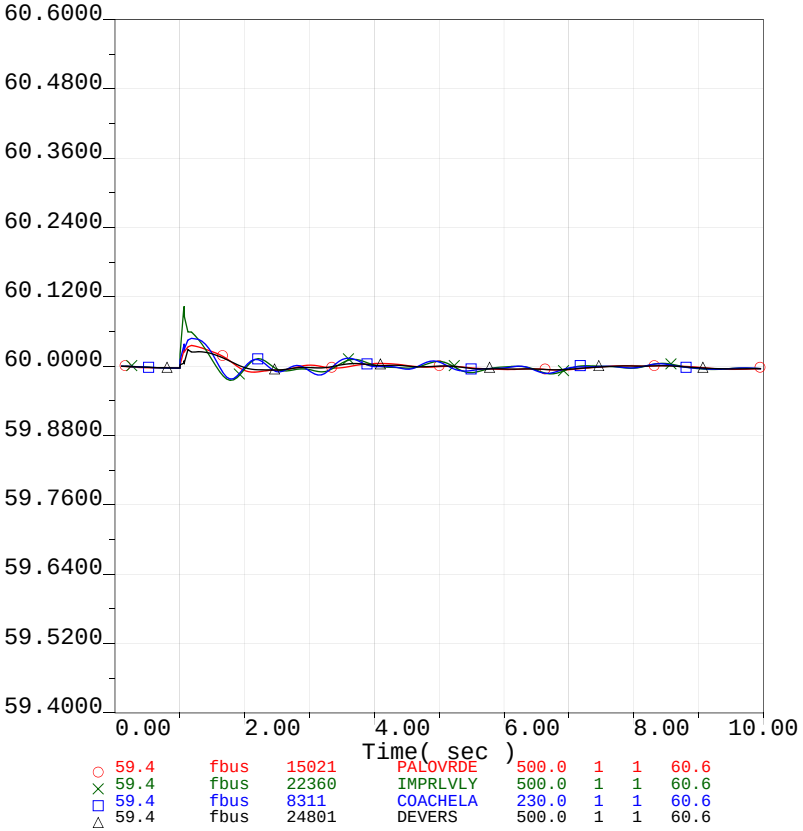
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 3

la_ivml_noras_alt2 | Wed Jun 08 14:20:20 2005

SDGE Busses

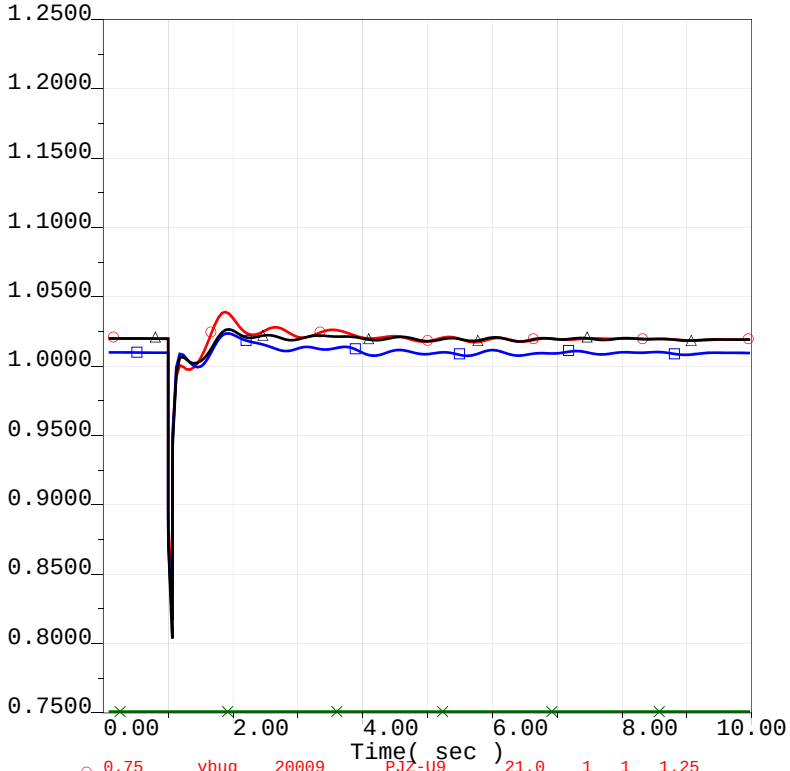
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 3

CFE Busses Page 1

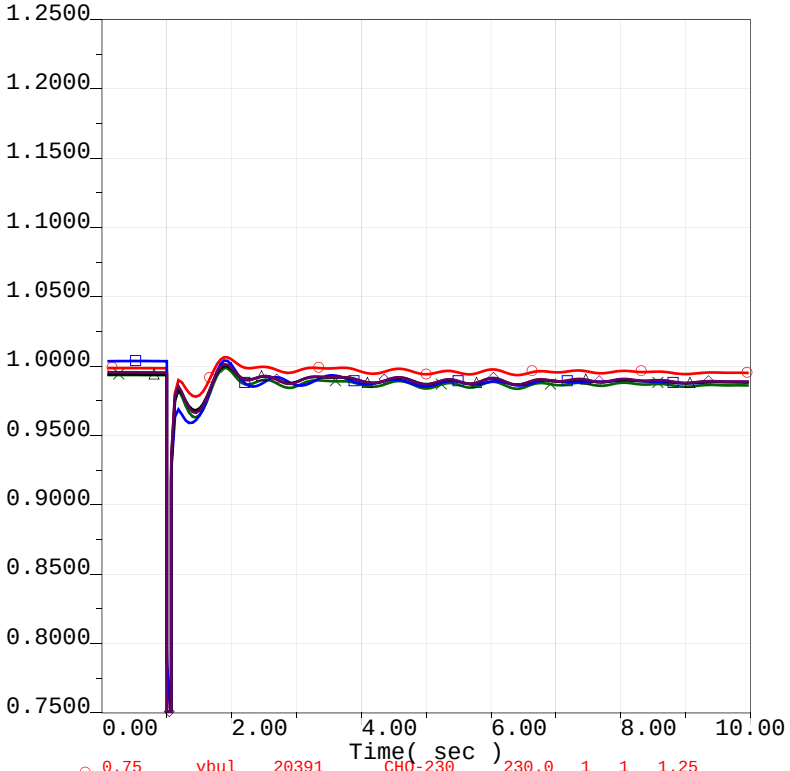


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 3

la_ivml_noras_alt2 | Wed Jun 08 14:20:22 2005

CFE Busses Page 2

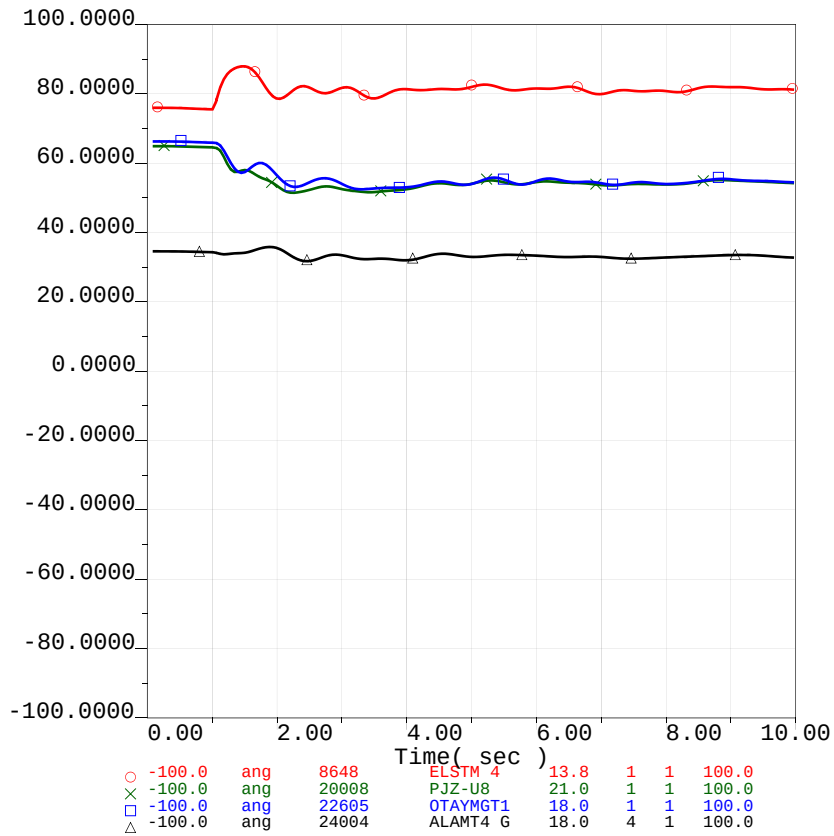


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 3

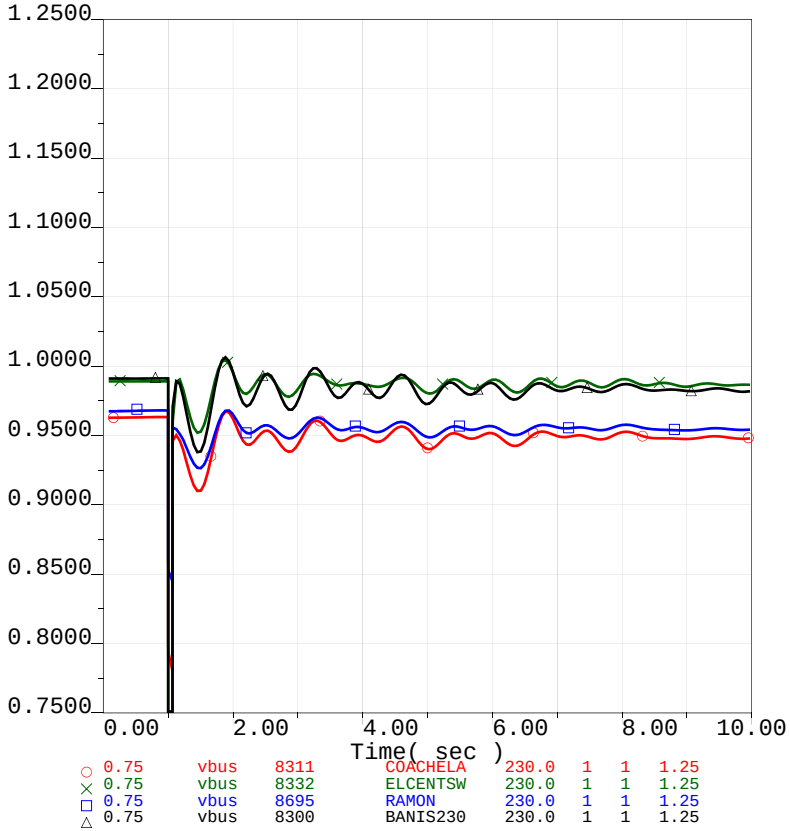
la_ivml_noras_alt2 | Wed Jun 08 14:20:23 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2 DISPATCH 3

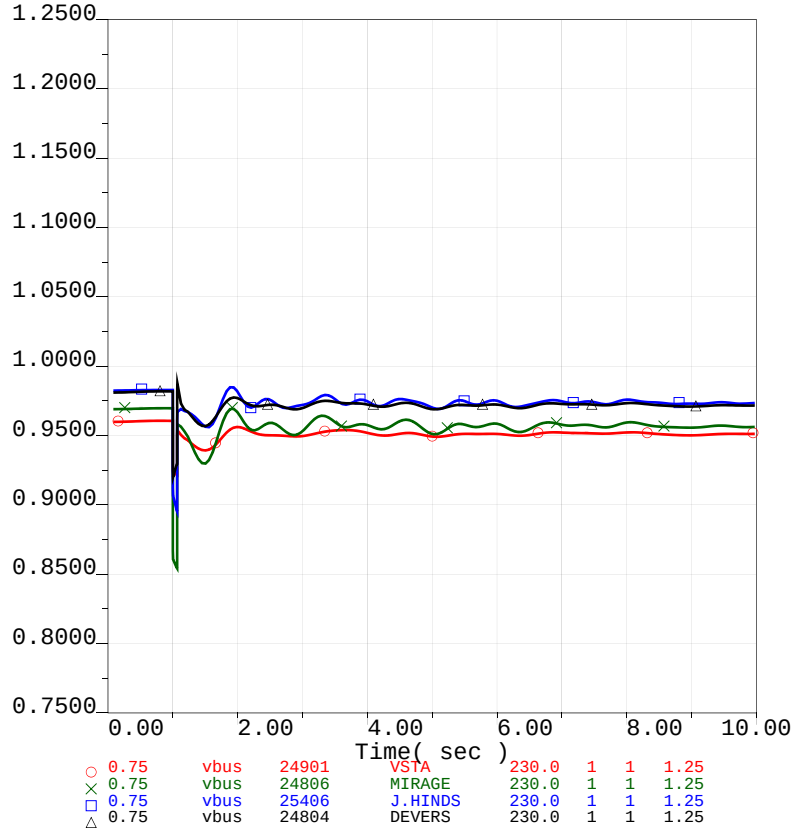
IID Busses



IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2a DISPATCH 3

la_ivml_noras_alt2a | Wed Jun 08 14:22:26 2005

SCE Busses



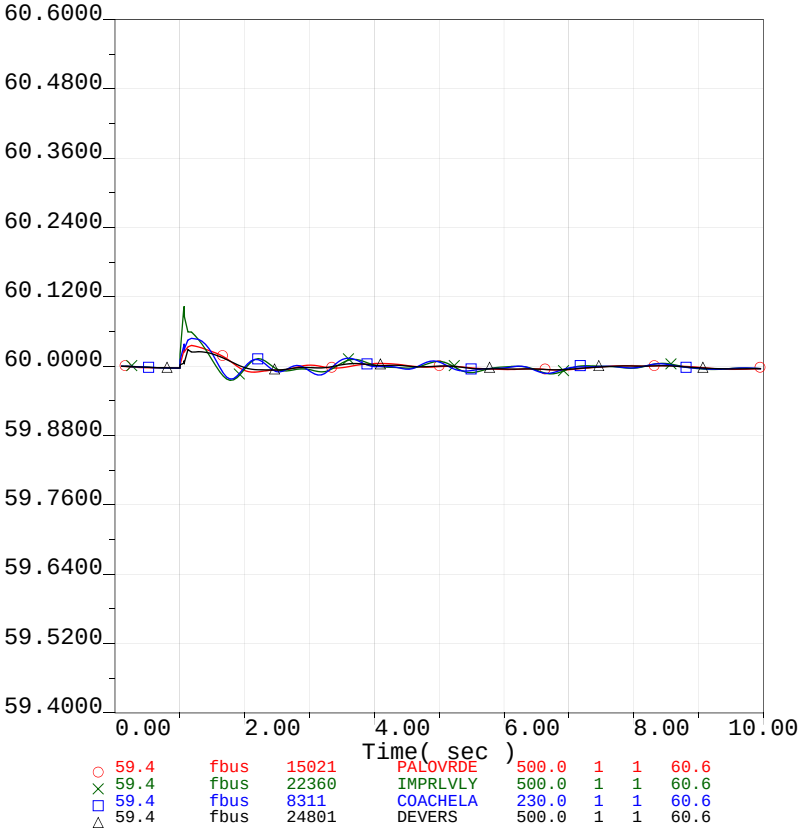
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2a DISPATCH 3

la_ivml_noras_alt2a | Wed Jun 08 14:22:27 2005

SDGE Busses

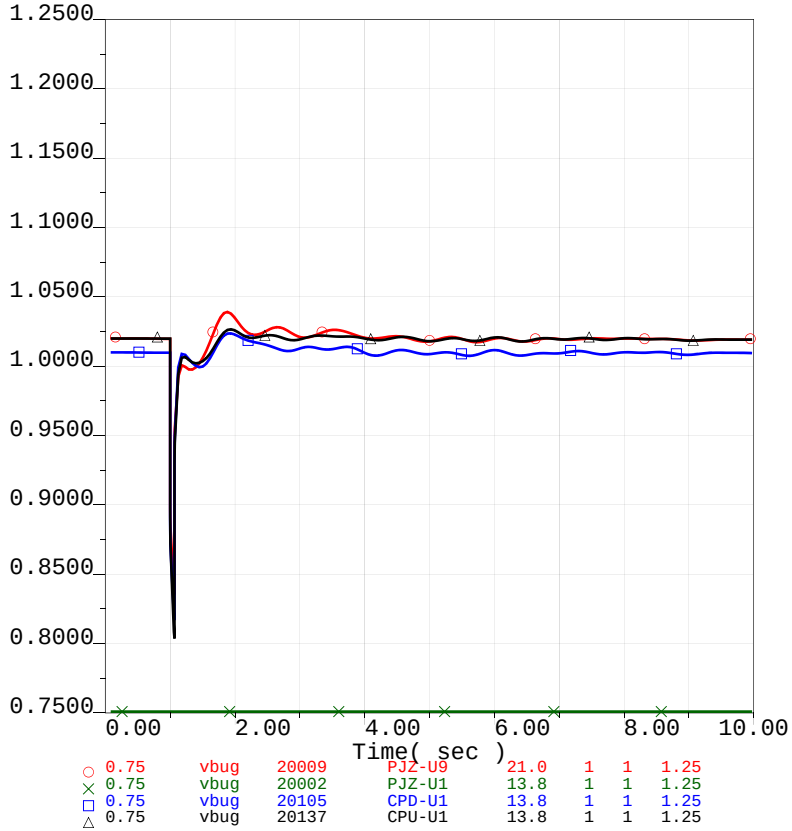
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2a DISPATCH 3

FBus Readings



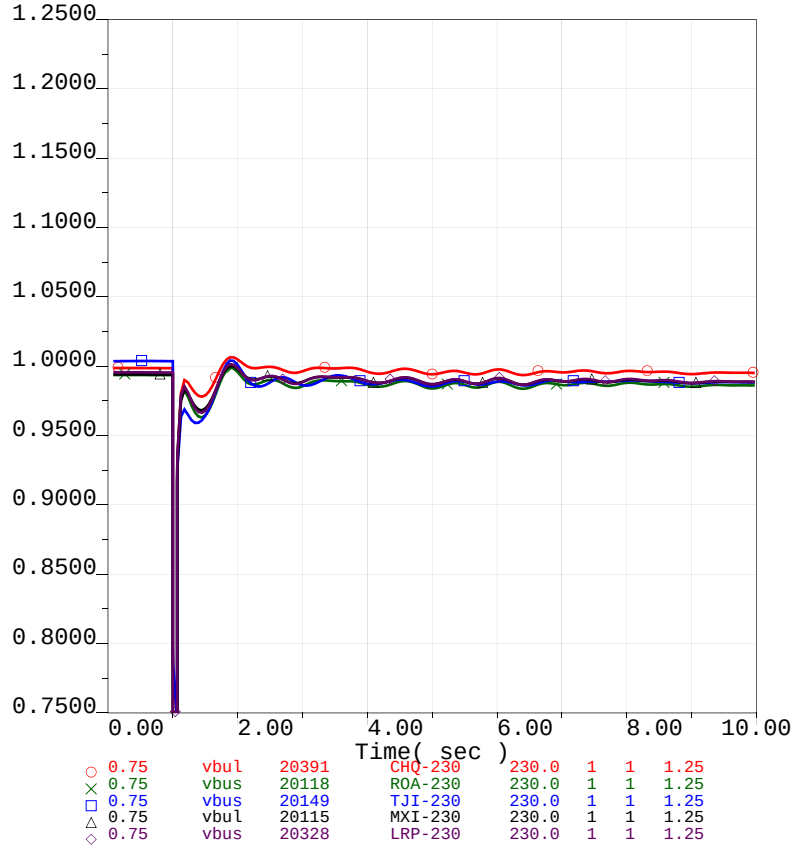
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2a DISPATCH 3

CFE Busses Page 1



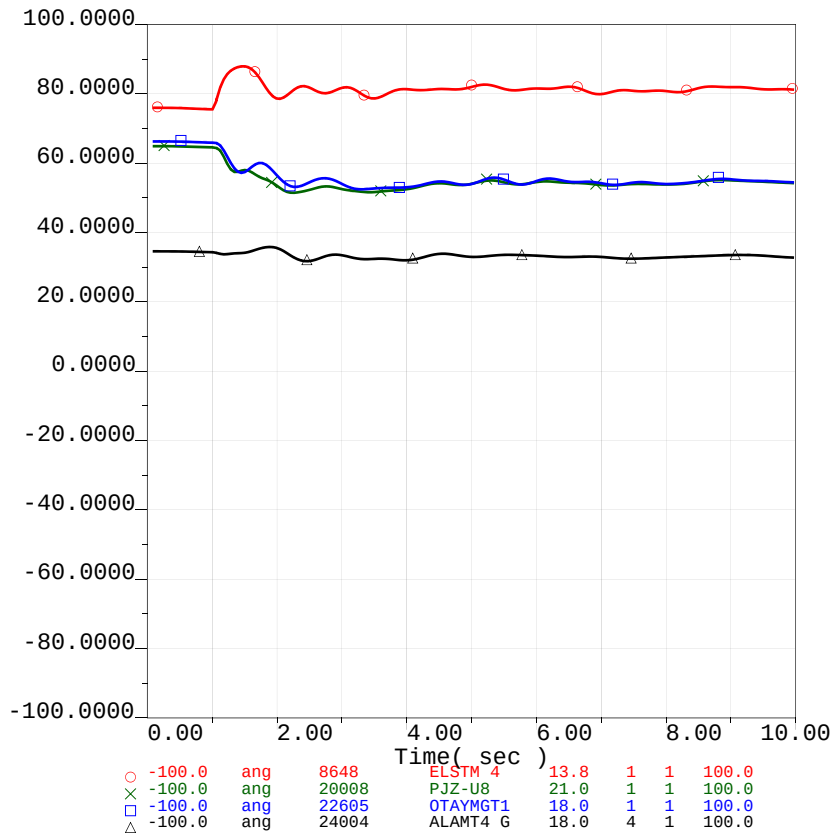
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2a DISPATCH 3

CFE Busses Page 2



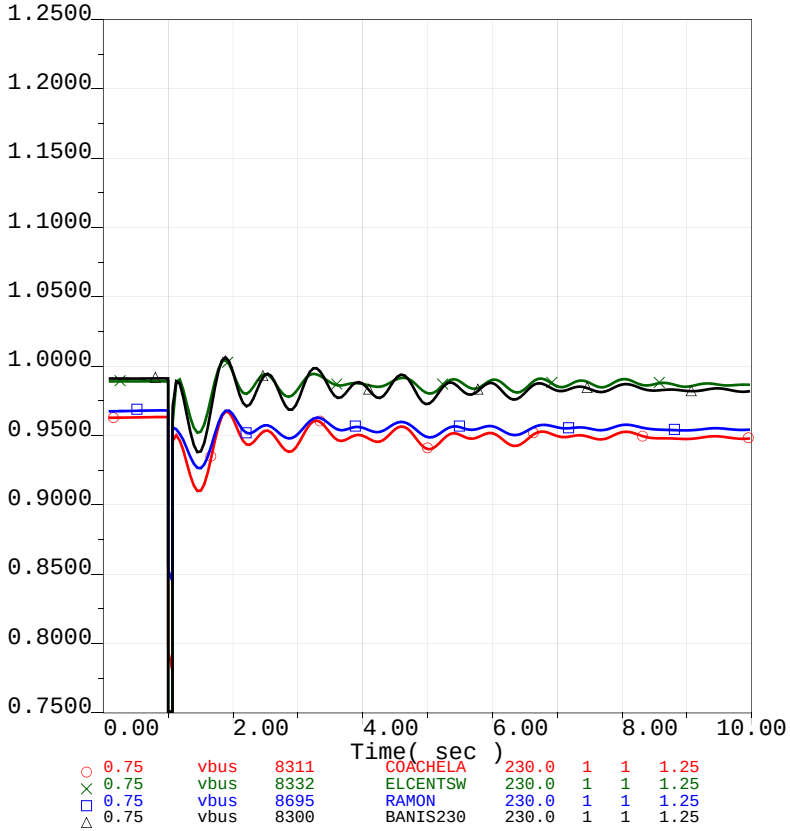
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2a DISPATCH 3

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 2a DISPATCH 3

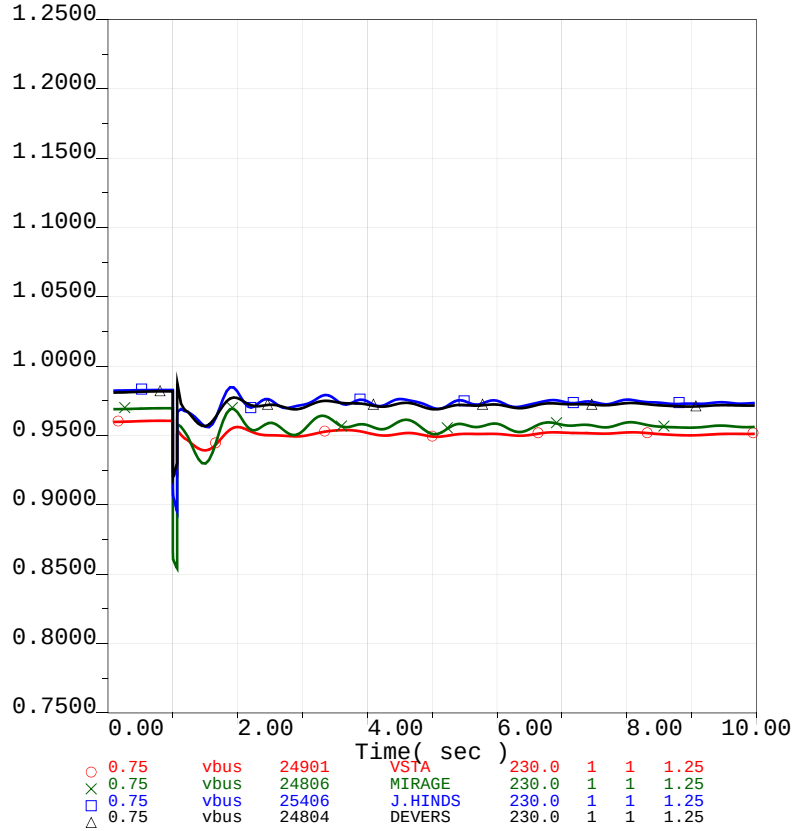
IID Busses



IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3b DISPATCH 3

la_ivml_noras_alt3b | Wed Jun 08 14:23:32 2005

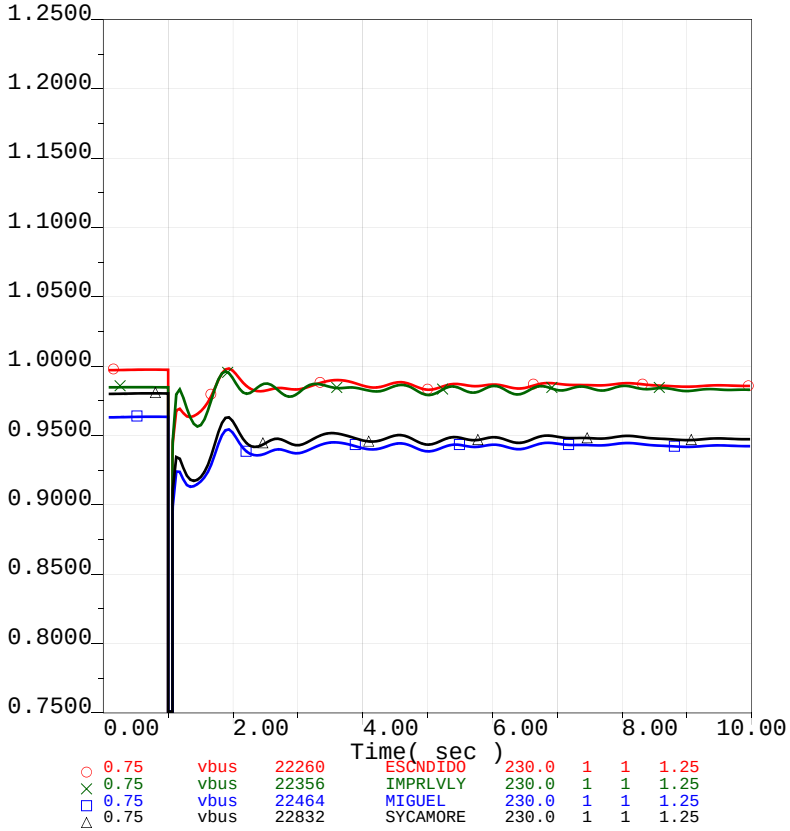
SCE Busses



IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3b DISPATCH 3

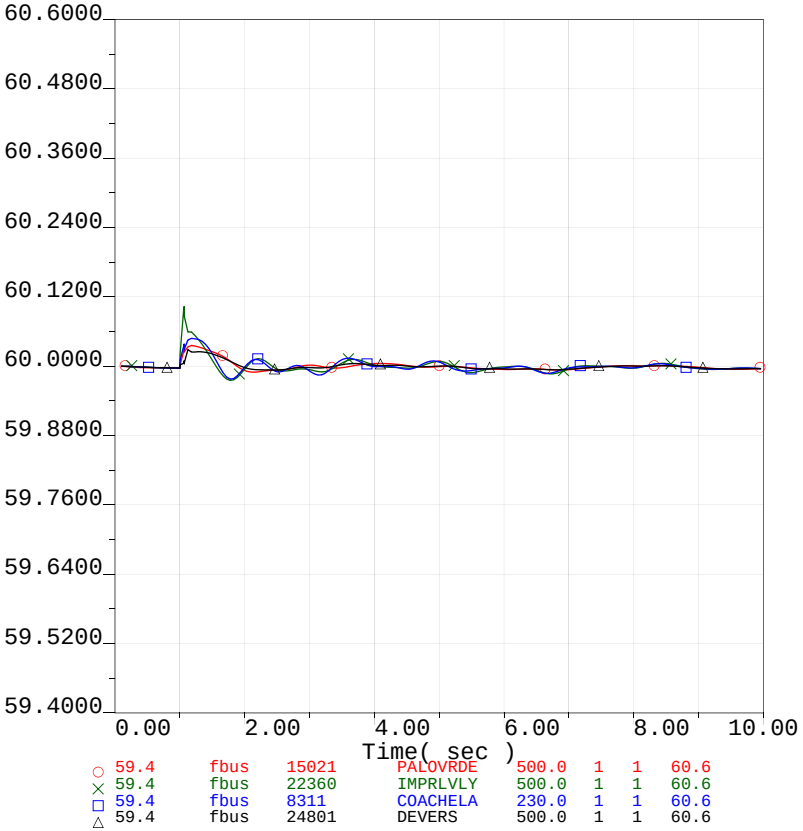
la_ivml_noras_alt3b | Wed Jun 08 14:23:33 2005

SDGE Busses



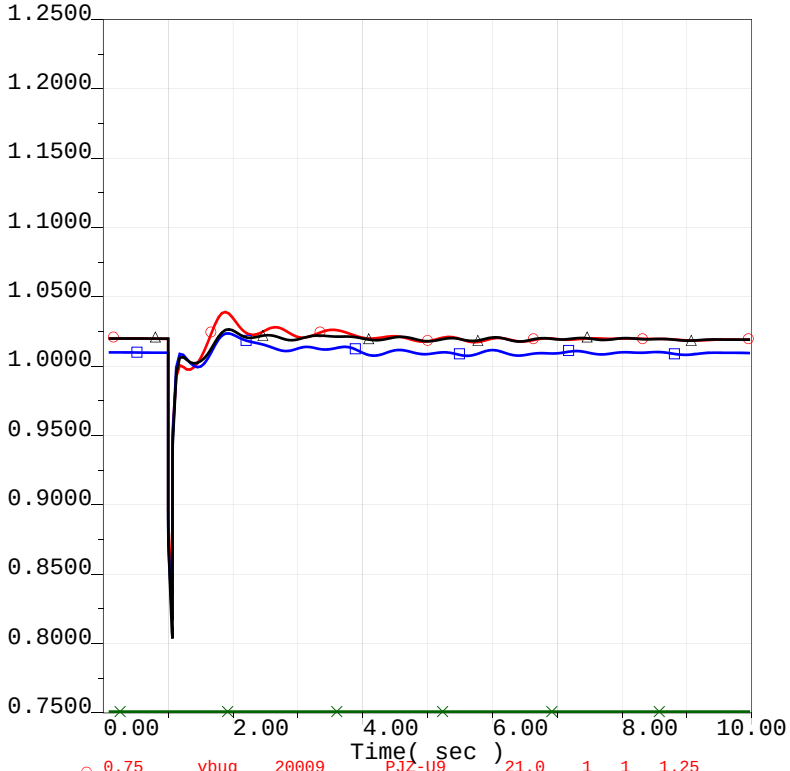
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3b DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3b DISPATCH 3

CFE Busses Page 1

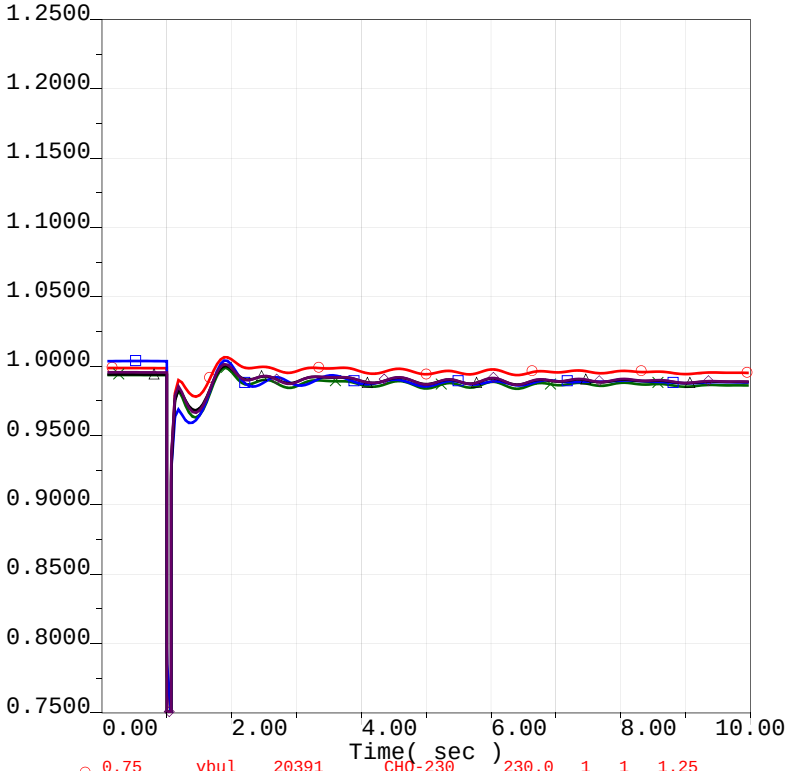


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3b DISPATCH 3

la_ivml_noras_alt3b | Wed Jun 08 14:23:35 2005

CFE Busses Page 2

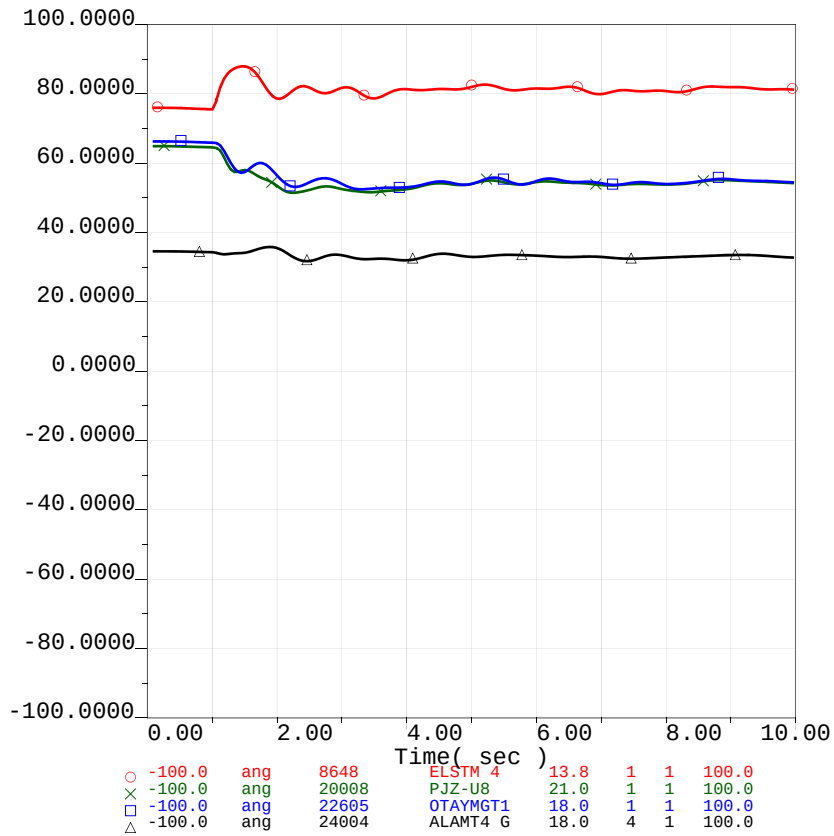


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3b DISPATCH 3

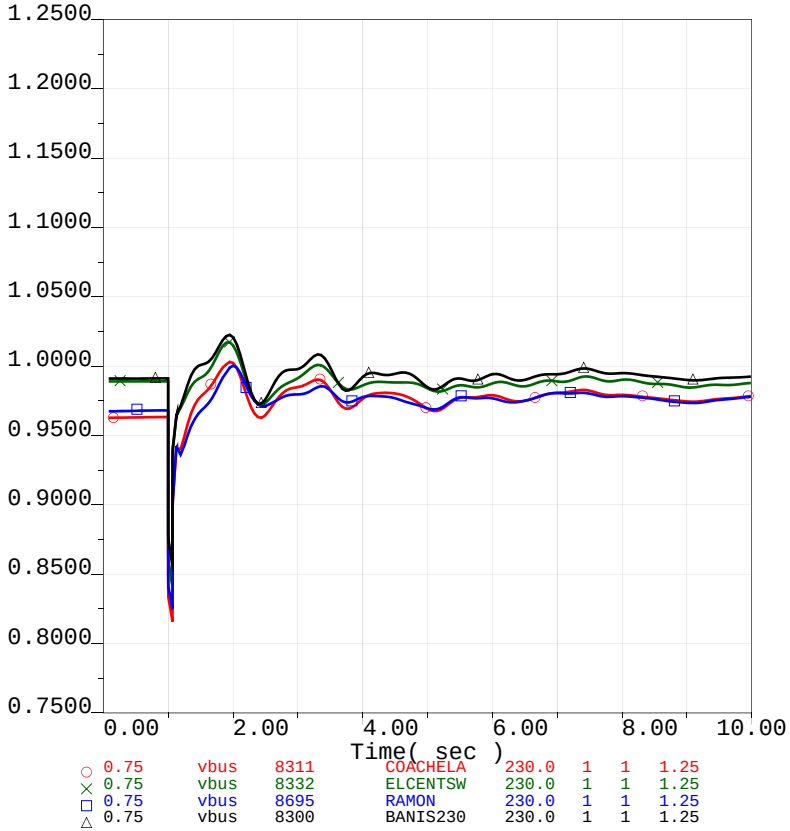
la_ivml_noras_alt3b | Wed Jun 08 14:23:36 2005

Rotor Angles for Gen Busses



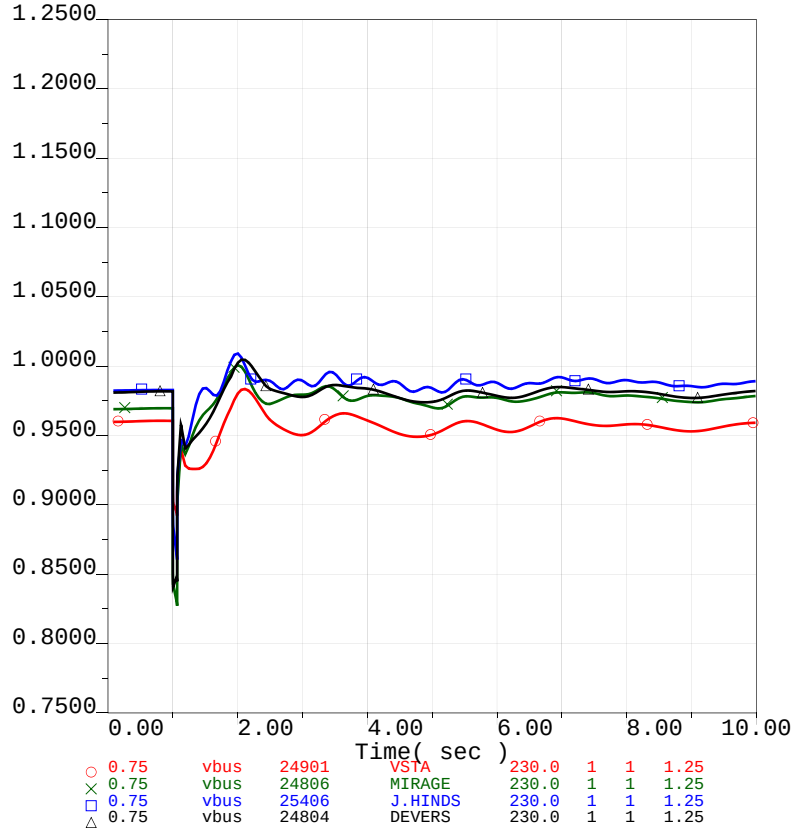
IVSG STUDY
Light Autumn Case
Trip Imperial Valley - Miguel 500 kV No RAS
Case ALT 3b DISPATCH 3

IID Busses



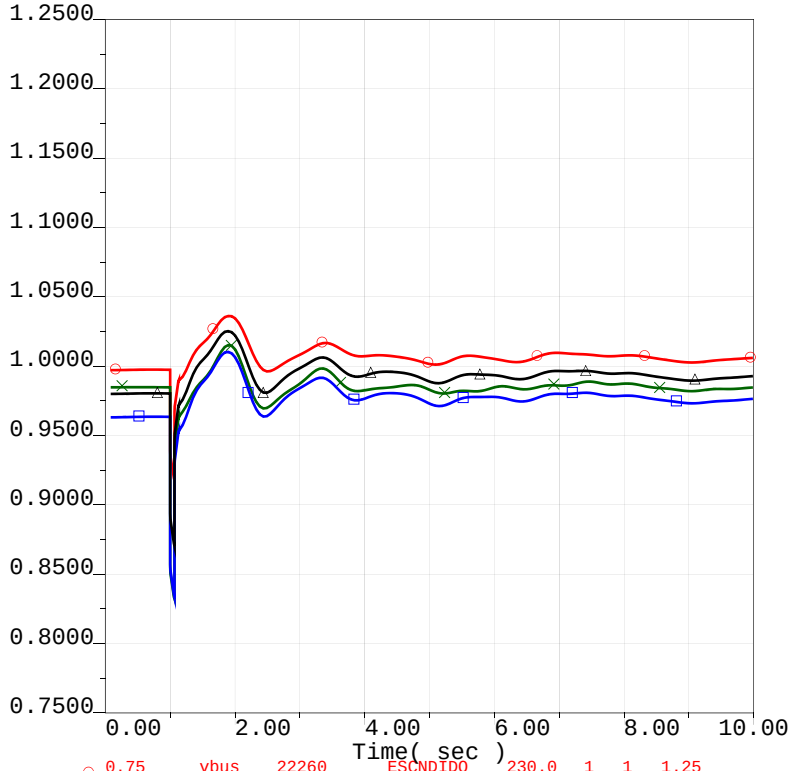
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 3

SCE Busses



IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 3

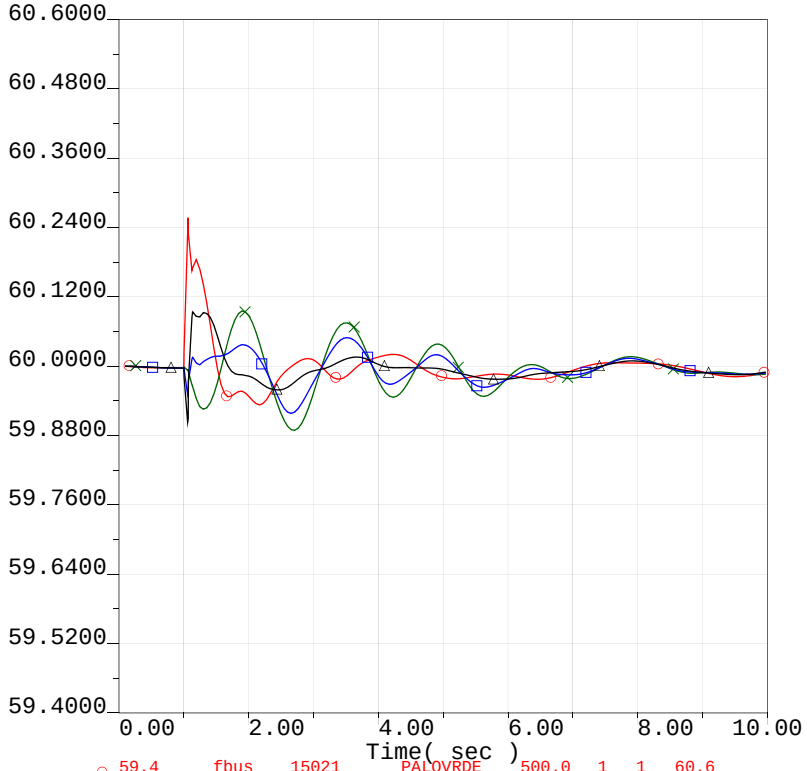
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 3

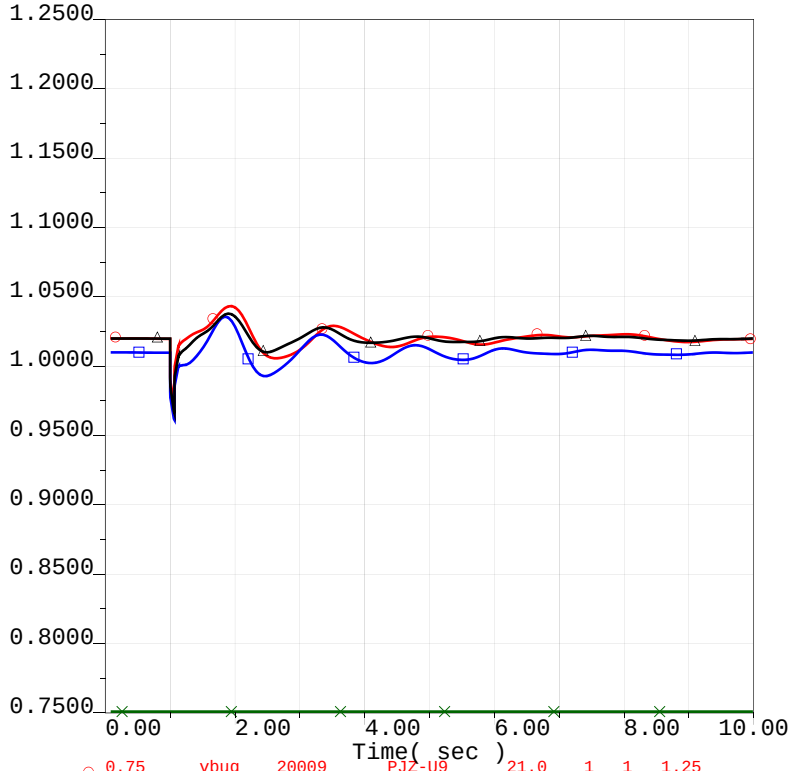
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 3

CFE Busses Page 1

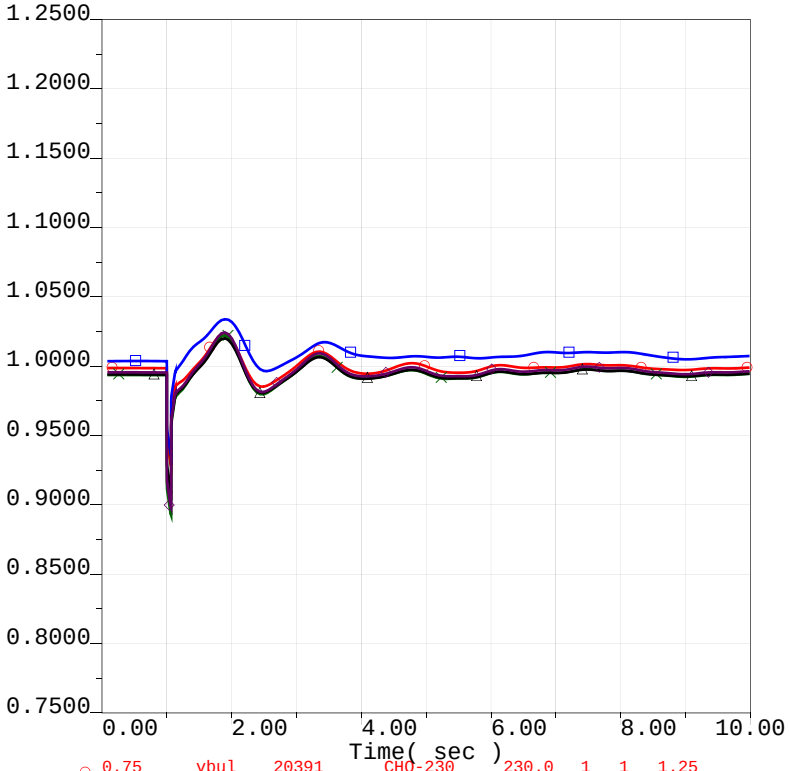


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 3

la_hang_alt2 | Wed Jun 08 10:54:06 2005

CFE Busses Page 2

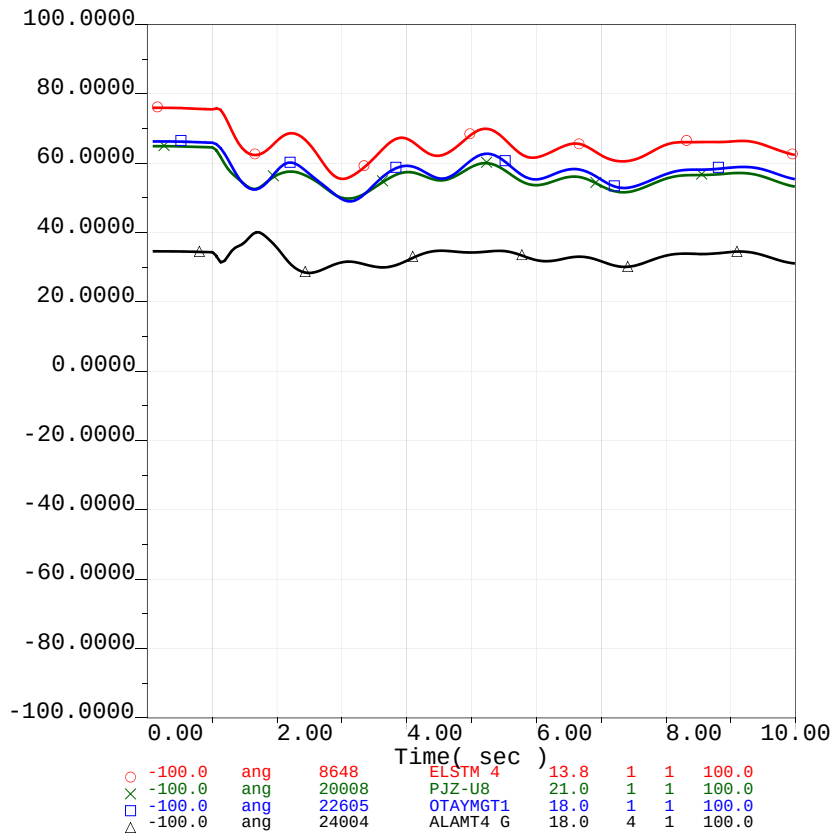


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 3

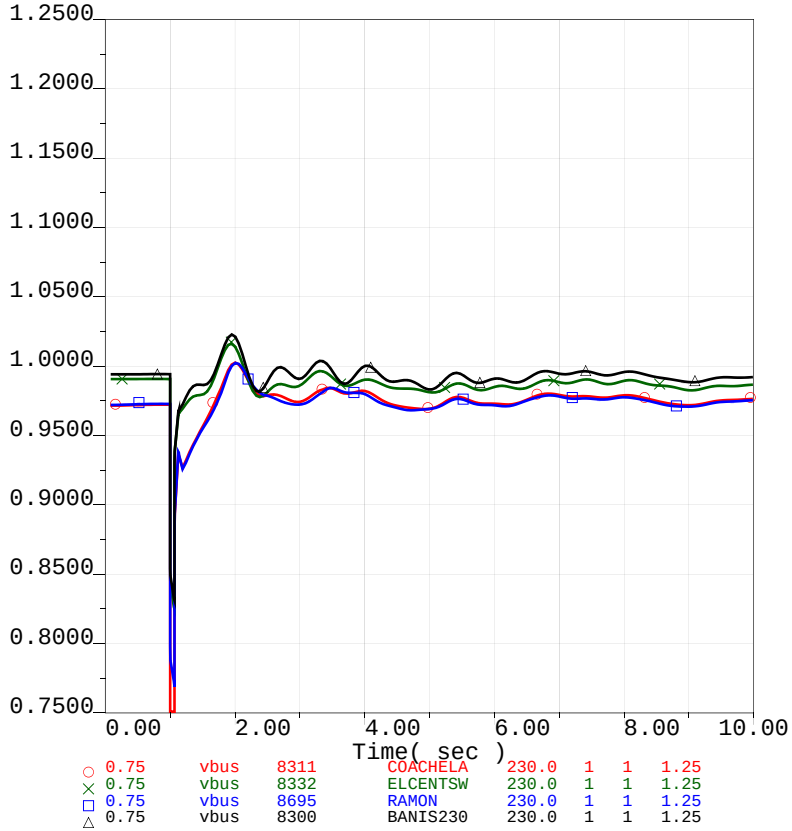
la_hang_alt2 | Wed Jun 08 10:54:07 2005

Rotor Angles for Gen Busses



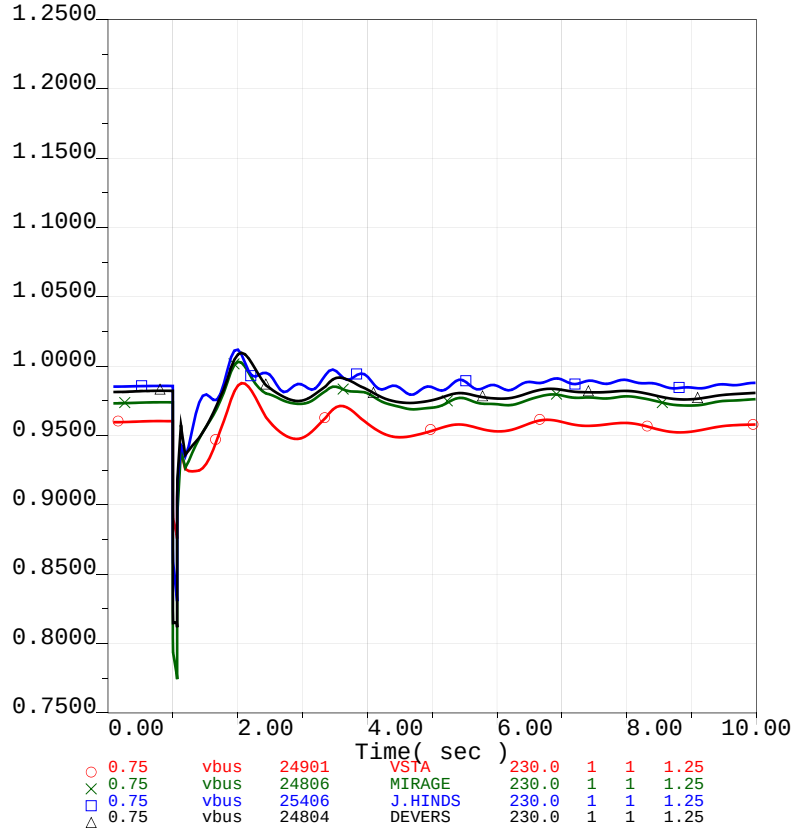
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2 DISPATCH 3

IID Busses



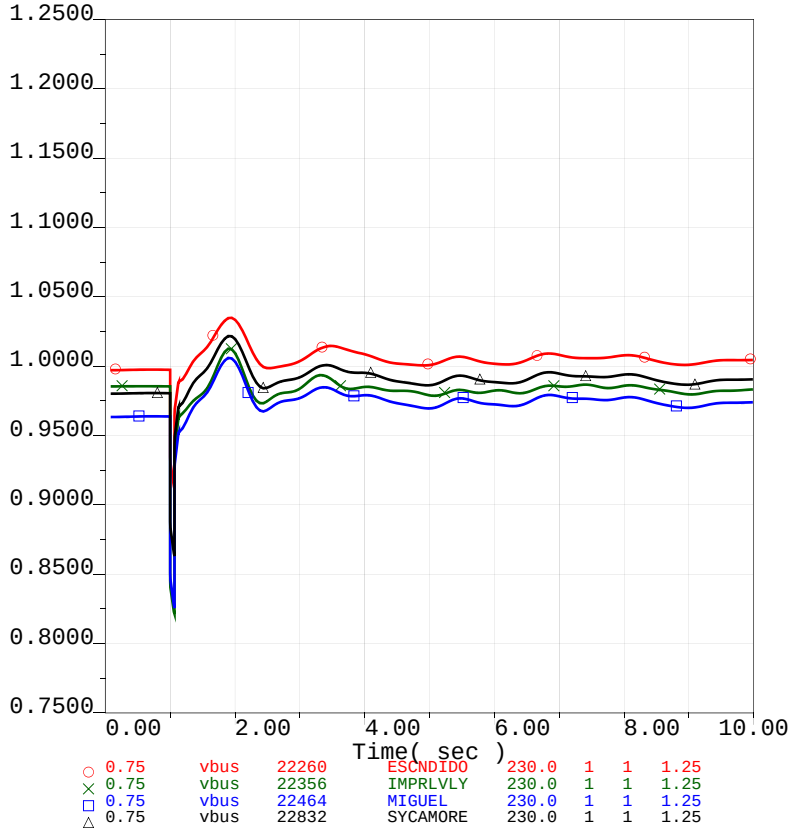
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2A DISPATCH 3

SCE Busses



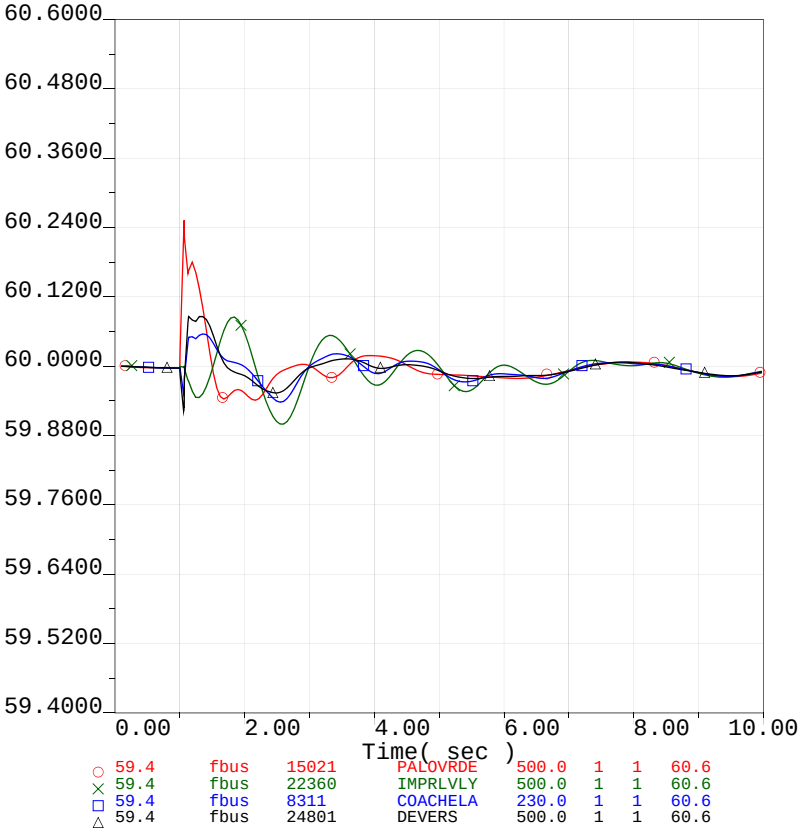
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2A DISPATCH 3

SDGE Busses



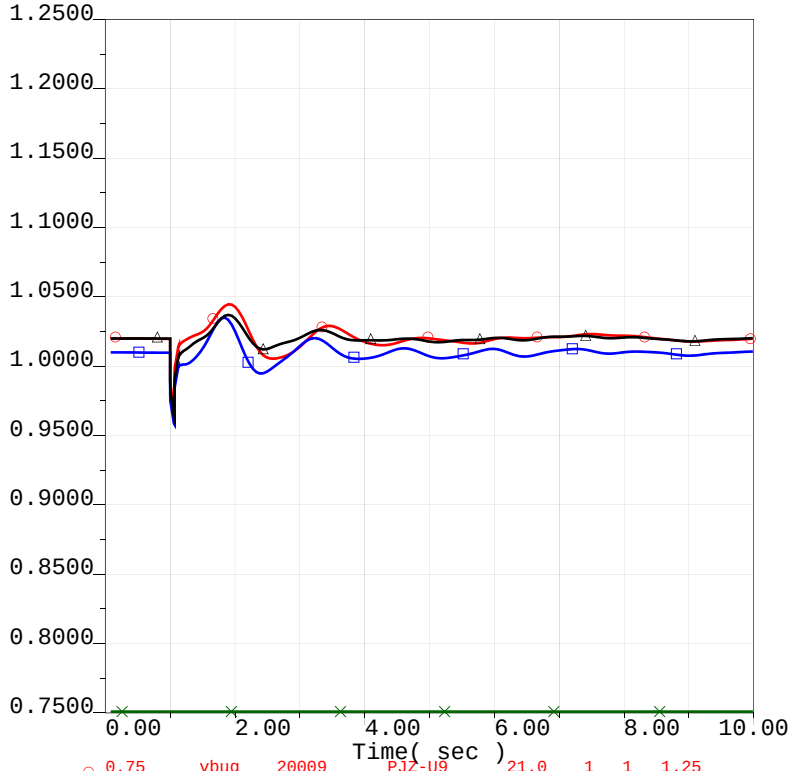
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2A DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2A DISPATCH 3

CFE Busses Page 1

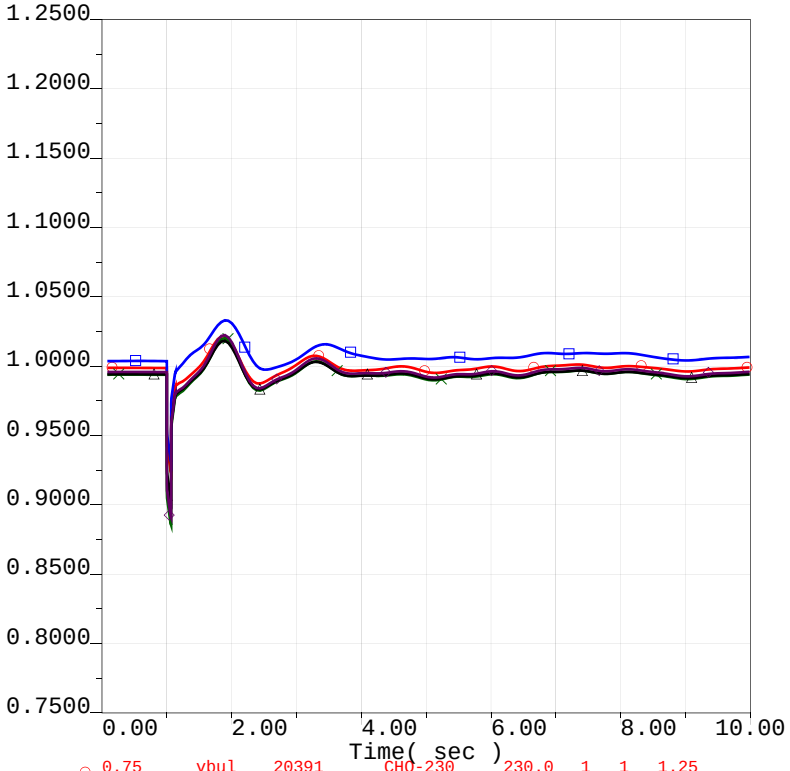


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2A DISPATCH 3

la_hang_alt2a | Wed Jun 08 10:55:20 2005

CFE Busses Page 2

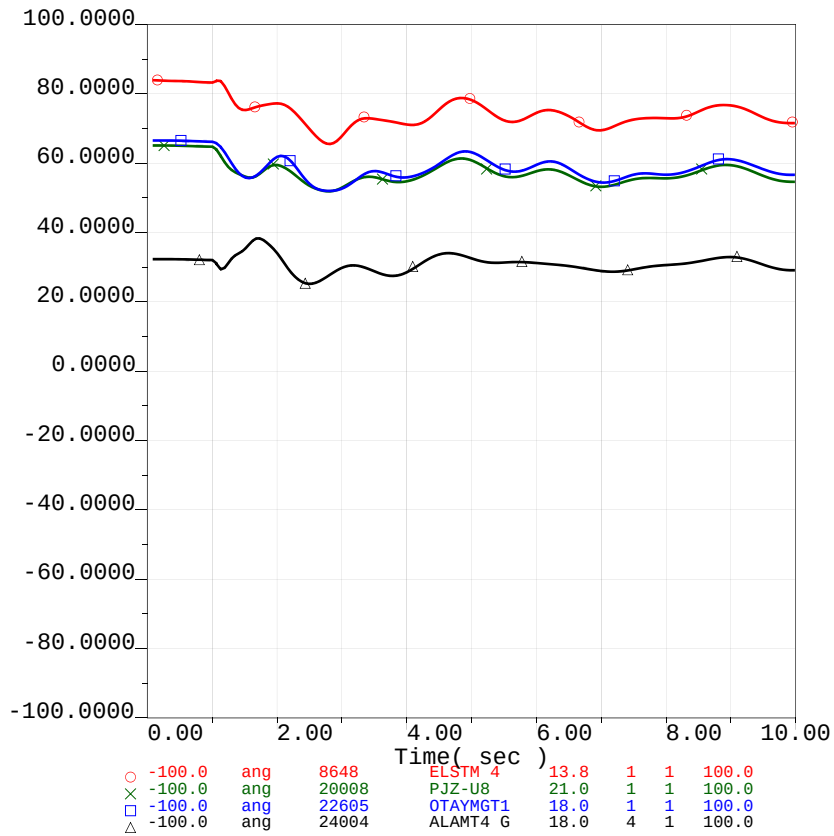


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2A DISPATCH 3

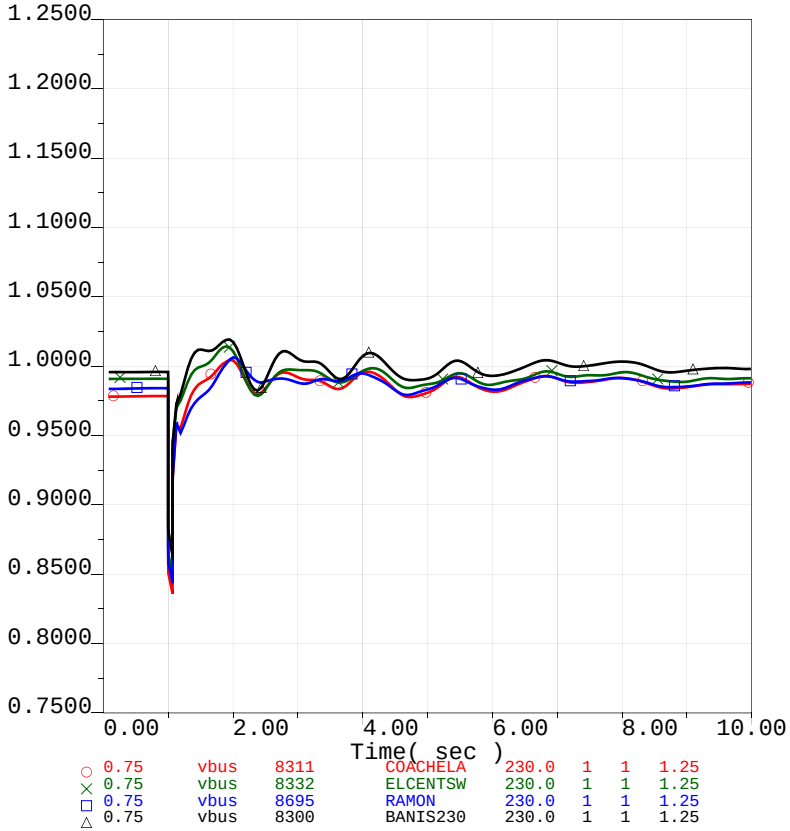
la_hang_alt2a | Wed Jun 08 10:55:20 2005

Rotor Angles for Gen Busses



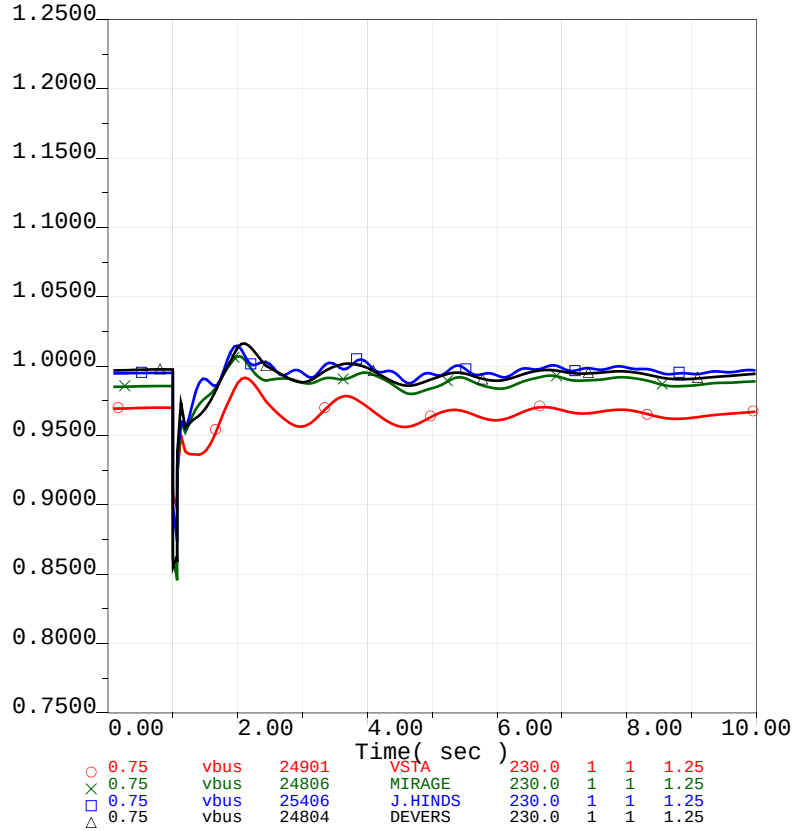
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 2A DISPATCH 3

IID Busses



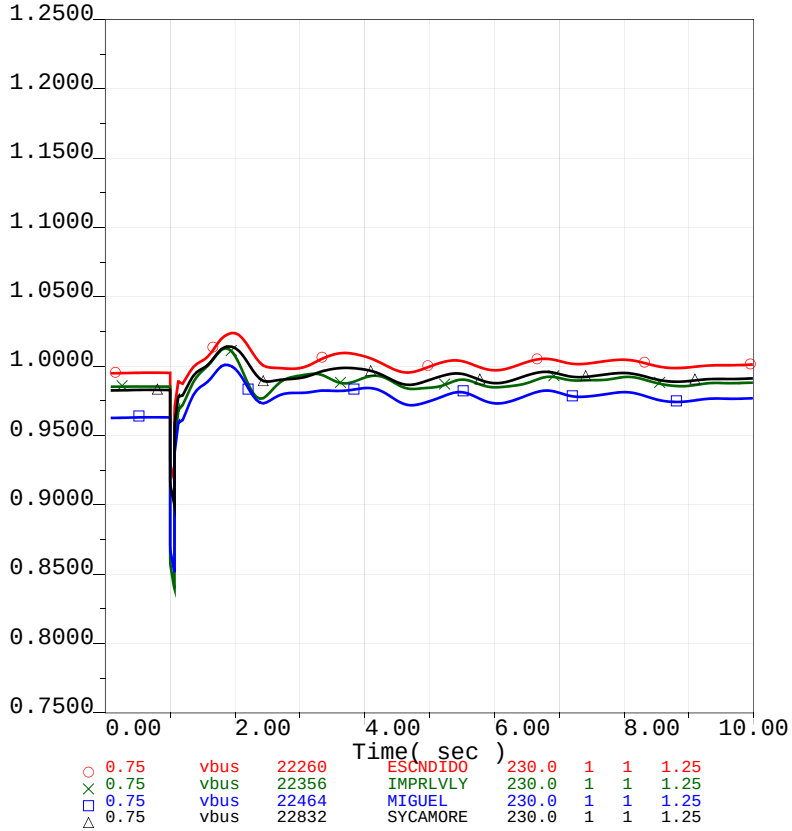
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 3

SCE Busses



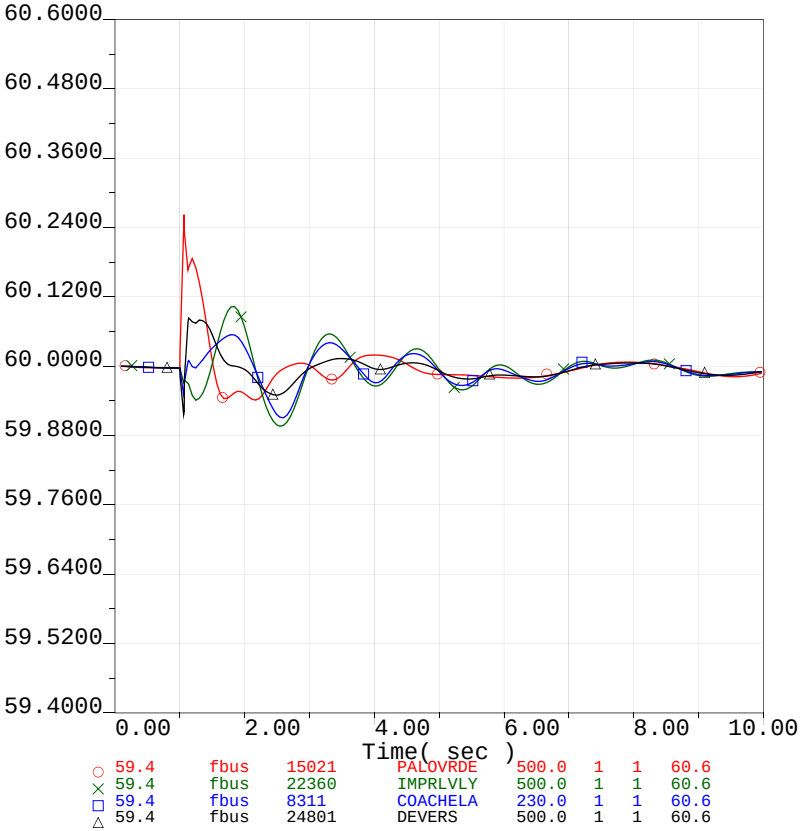
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 3

SDGE Busses



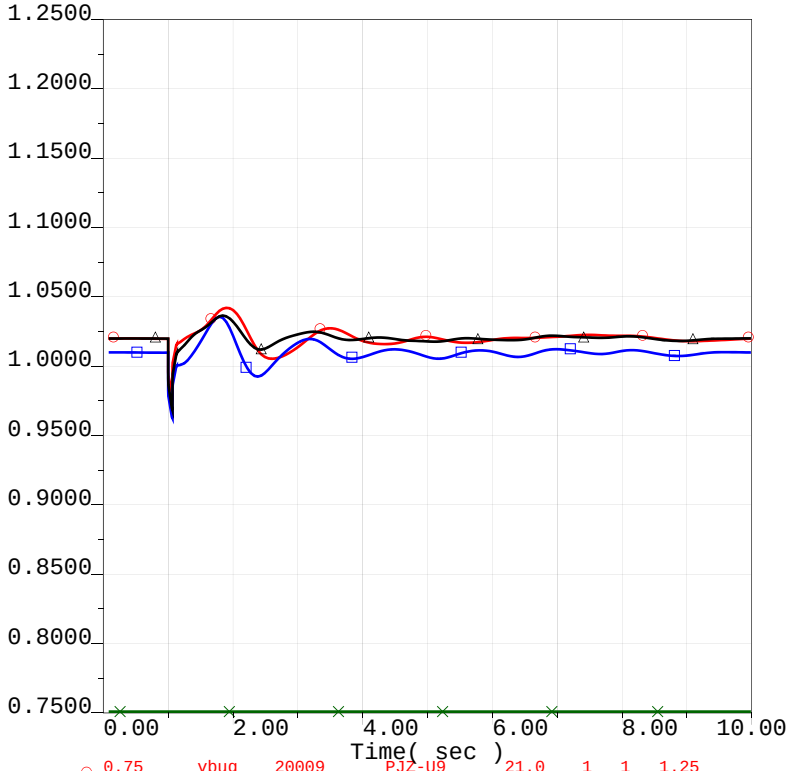
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 3

CFE Busses Page 1

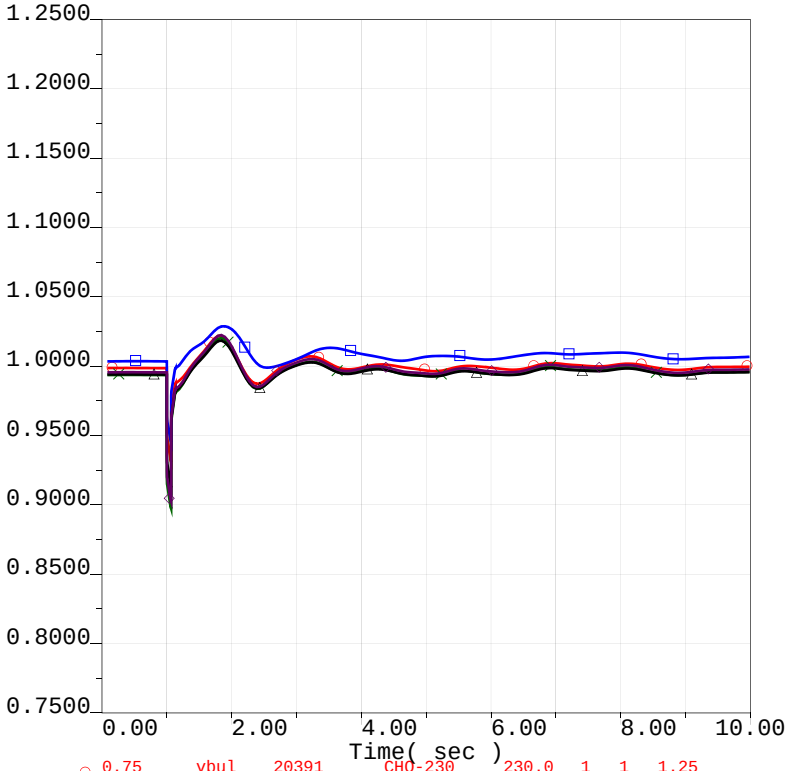


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 3

la_hang_alt3b | Wed Jun 08 10:56:13 2005

CFE Busses Page 2

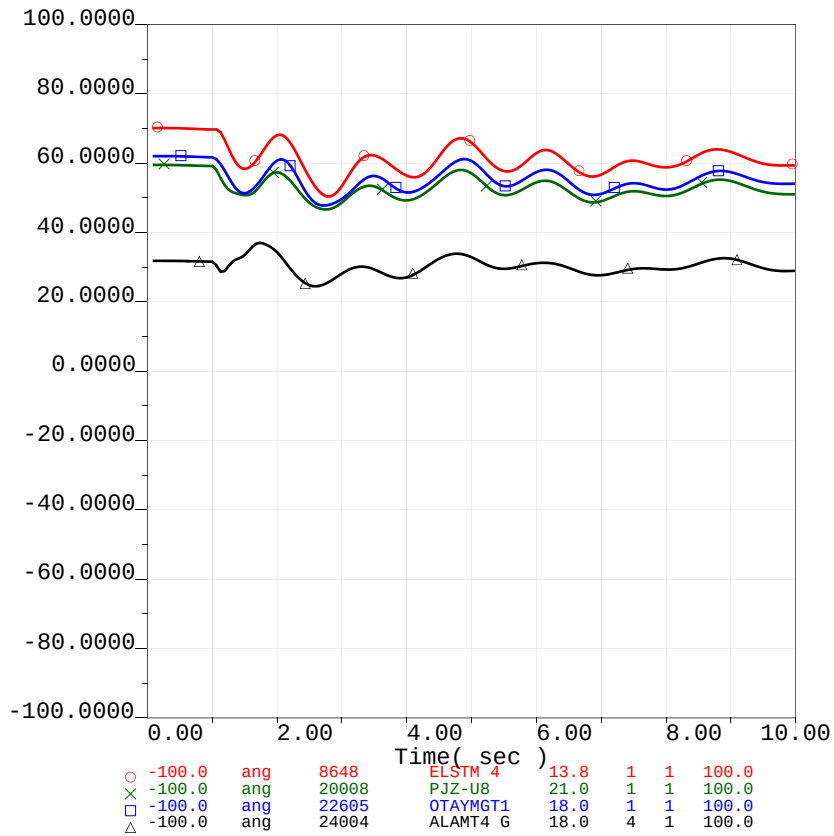


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 3

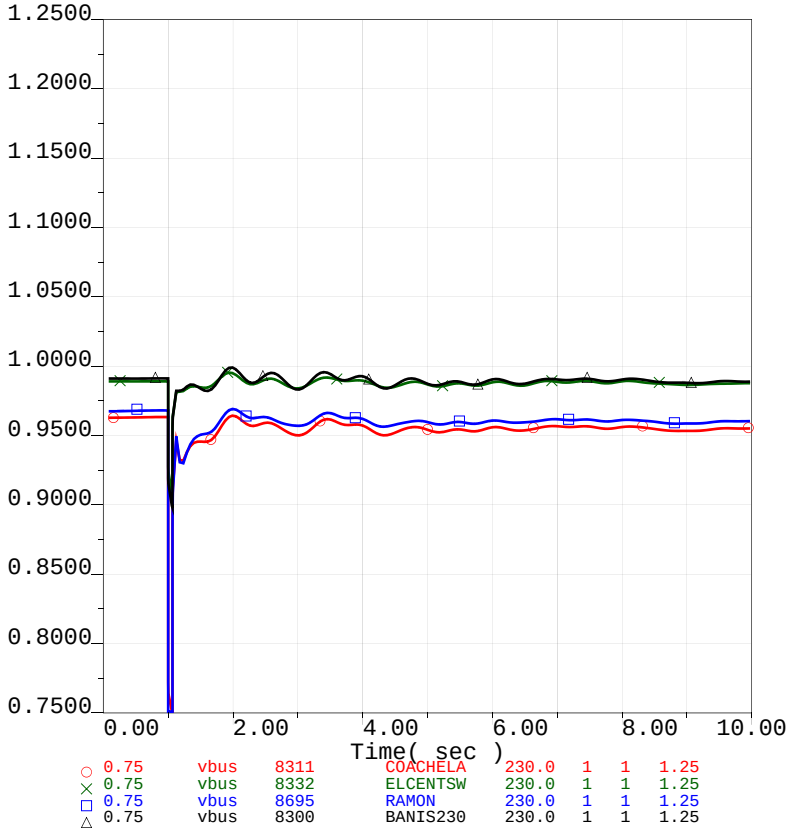
la_hang_alt3b | Wed Jun 08 10:56:14 2005

Rotor Angles for Gen Busses



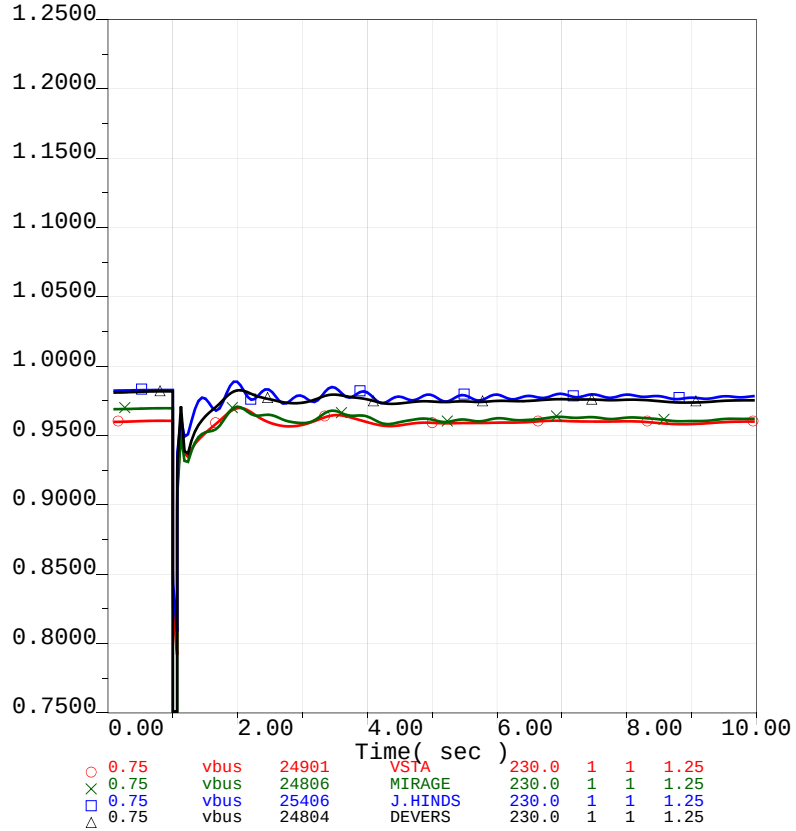
IVSG STUDY
Light Autumn Case
Trip Hassayampa - N. Gila 500 kV
Case ALT 3B DISPATCH 3

IID Busses



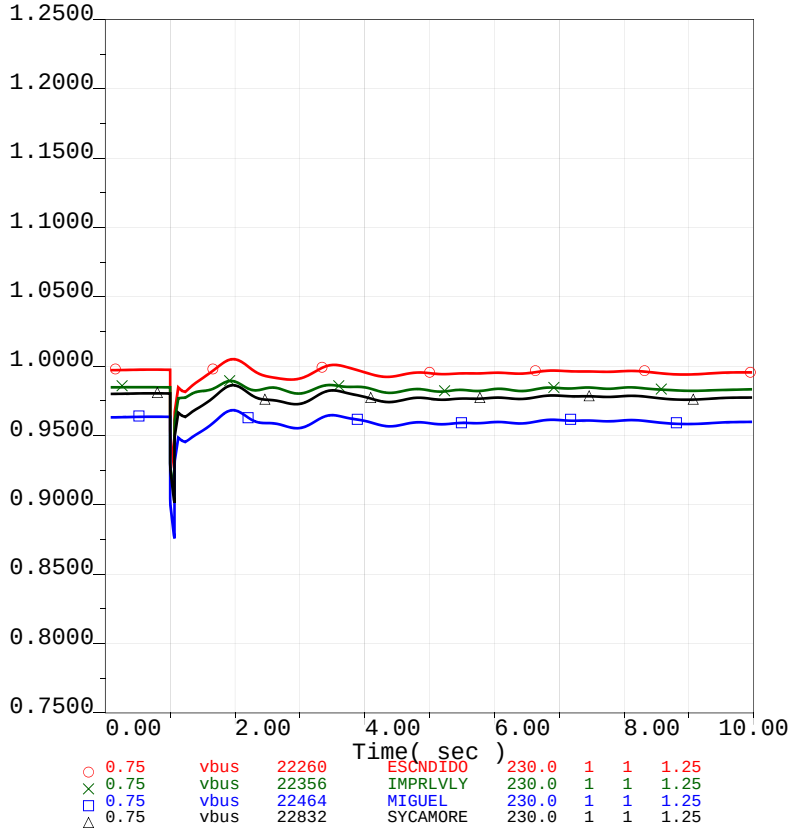
IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2 DISPATCH 3

SCE Busses



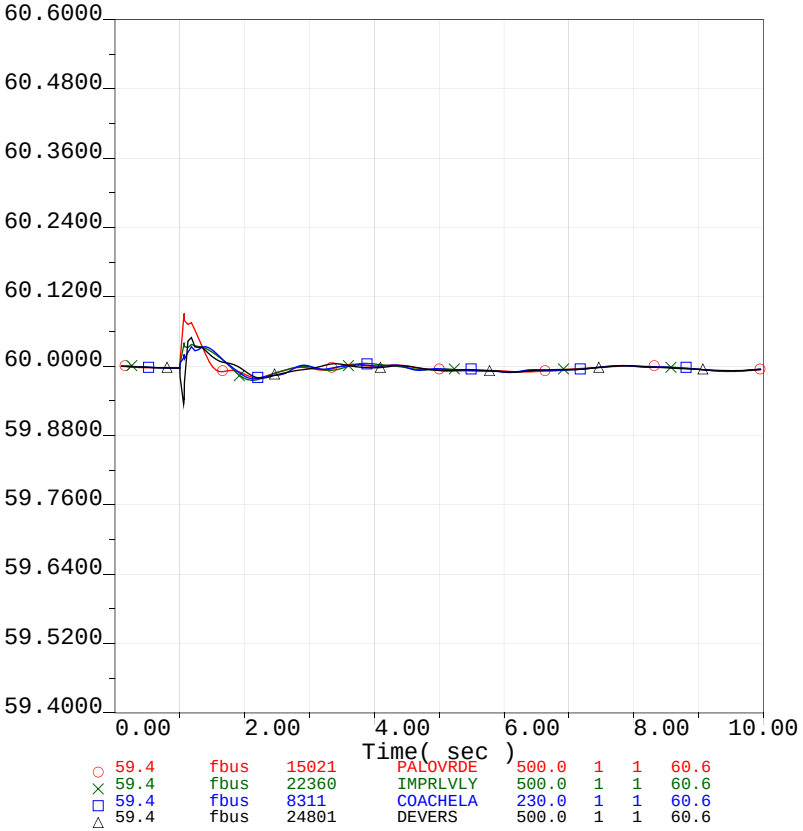
IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2 DISPATCH 3

SDGE Busses



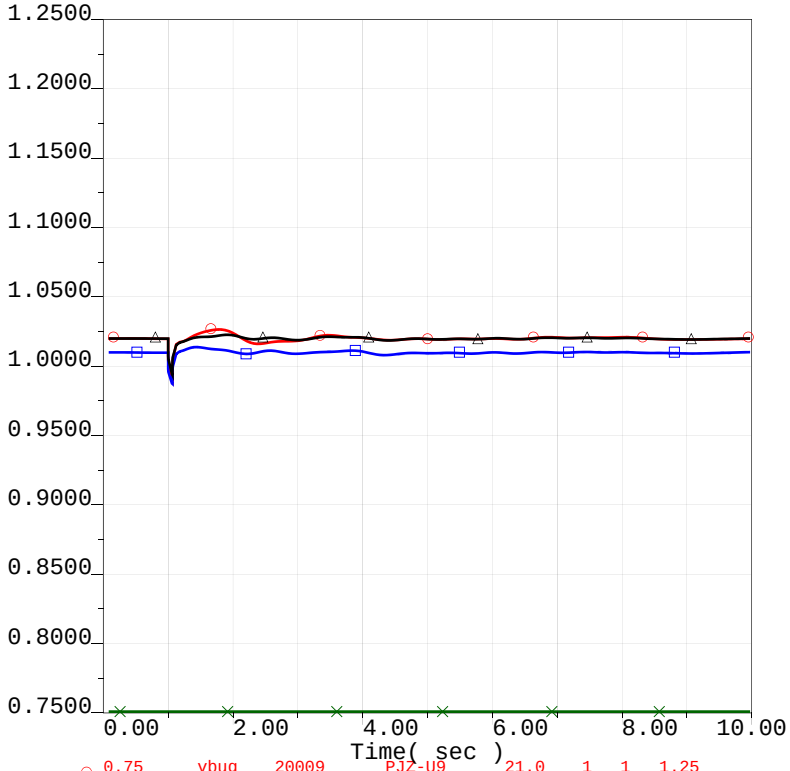
IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2 DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2 DISPATCH 3

CFE Busses Page 1

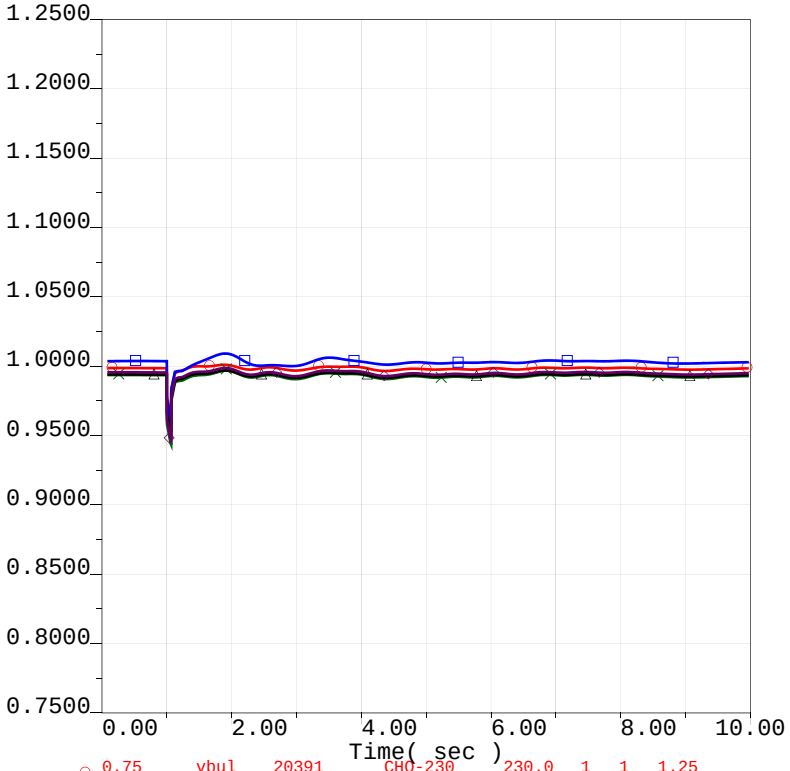


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2 DISPATCH 3

la_mpde_alt2 | Wed Jun 08 11:00:51 2005

CFE Busses Page 2

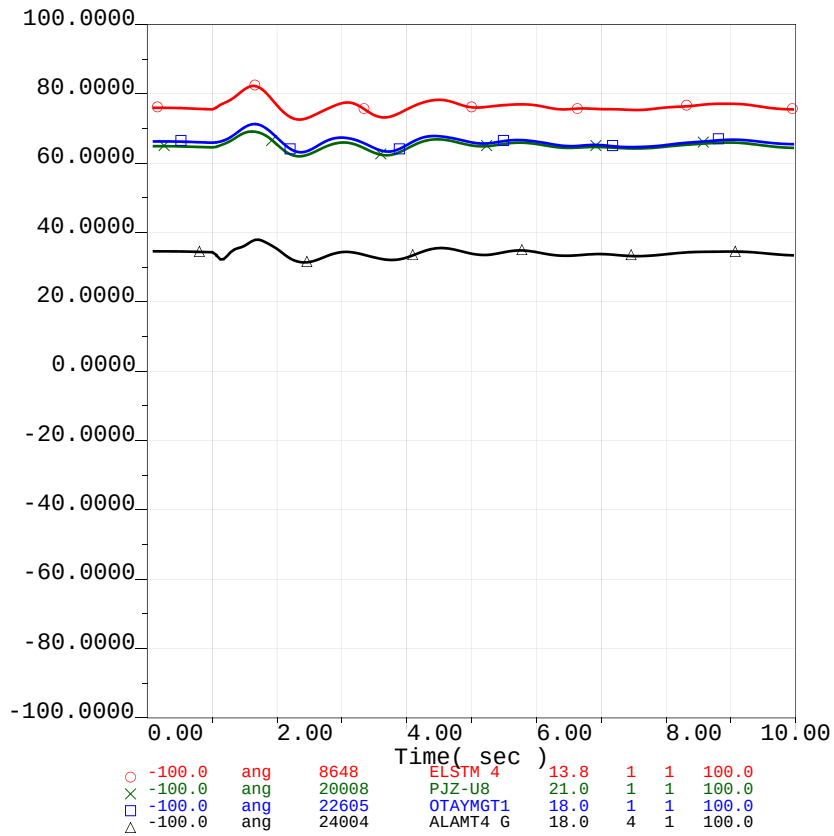


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2 DISPATCH 3

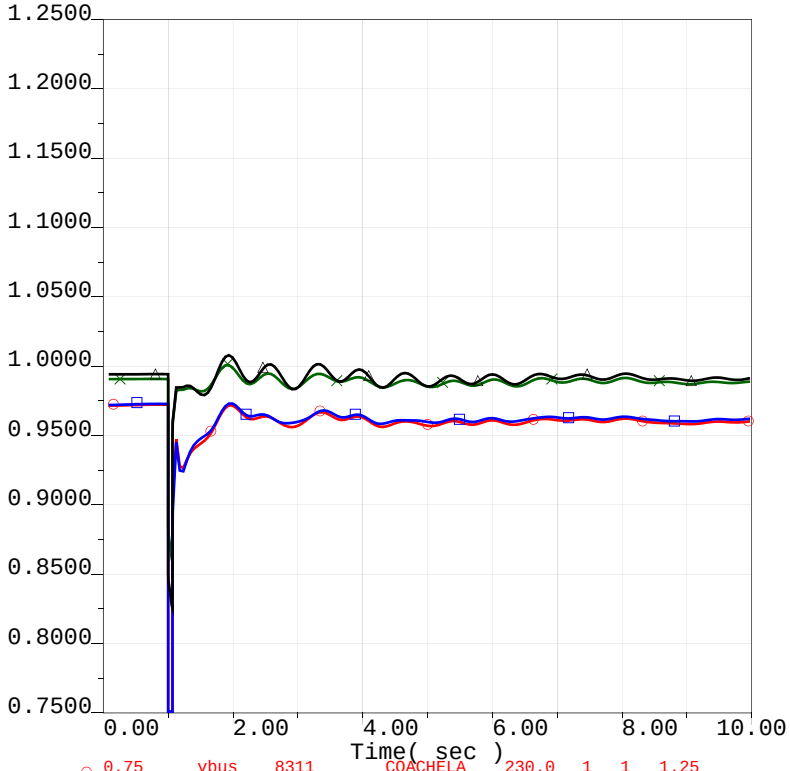
la_mpde_alt2 | Wed Jun 08 11:00:51 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2 DISPATCH 3

IID Busses

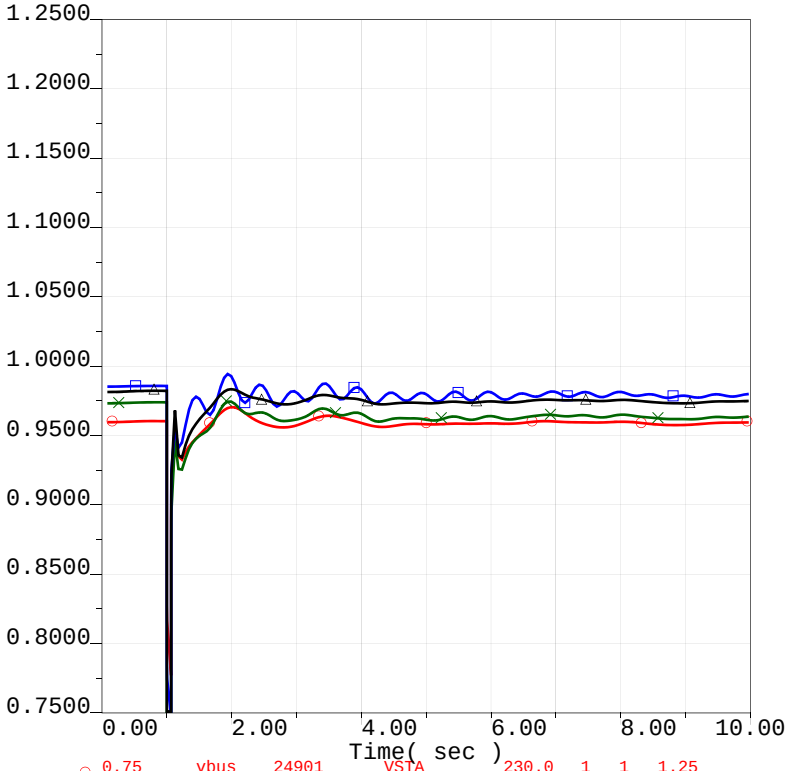


○ 0.75	vbus	8311	COACHELA	230.0	1	1	1.25
× 0.75	vbus	8332	ELCENTSW	230.0	1	1	1.25
□ 0.75	vbus	8695	RAMON	230.0	1	1	1.25
△ 0.75	vbus	8300	BANIS230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2a DISPATCH 3

la_mpde_alt2a | Wed Jun 08 11:01:45 2005

SCE Busses

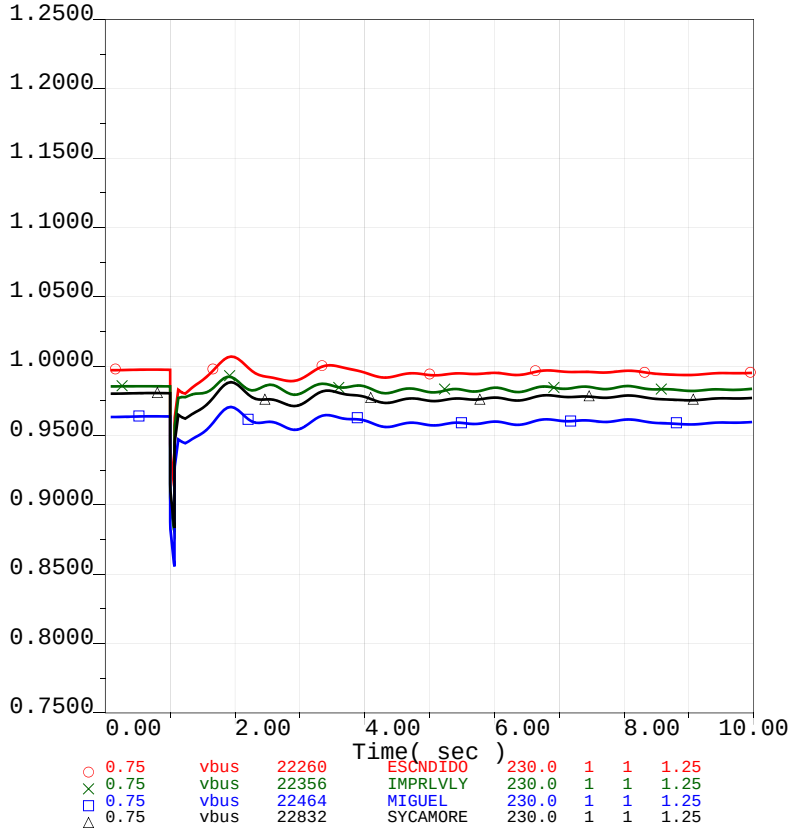


○ 0.75	vbus	24901	VSTA	230.0	1	1	1.25
× 0.75	vbus	24806	MIRAGE	230.0	1	1	1.25
□ 0.75	vbus	25406	J.HINDS	230.0	1	1	1.25
△ 0.75	vbus	24804	DEVERS	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2a DISPATCH 3

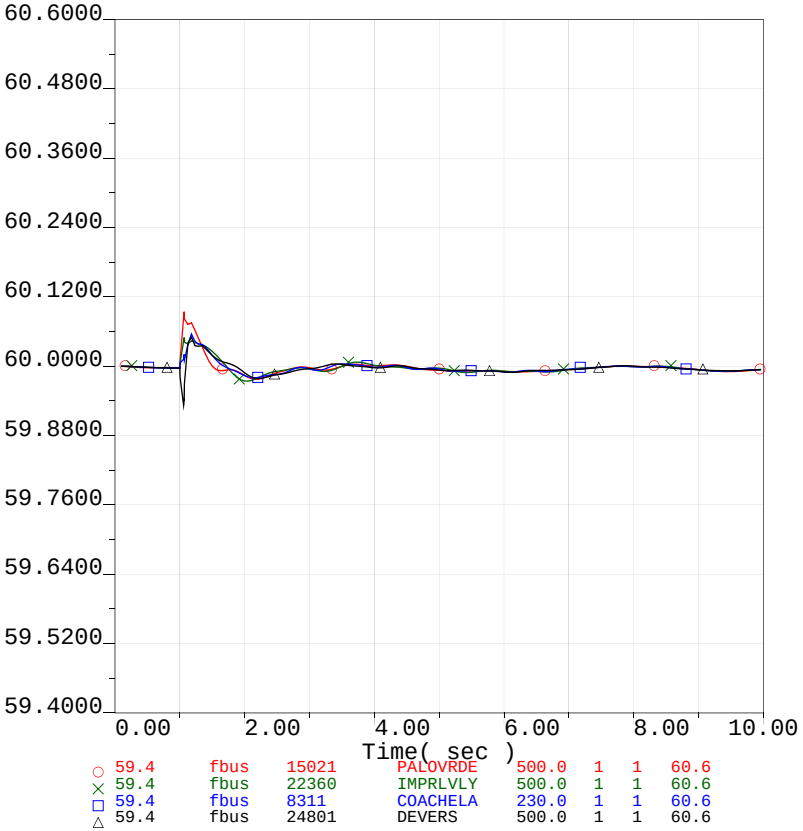
la_mpde_alt2a | Wed Jun 08 11:01:46 2005

SDGE Busses



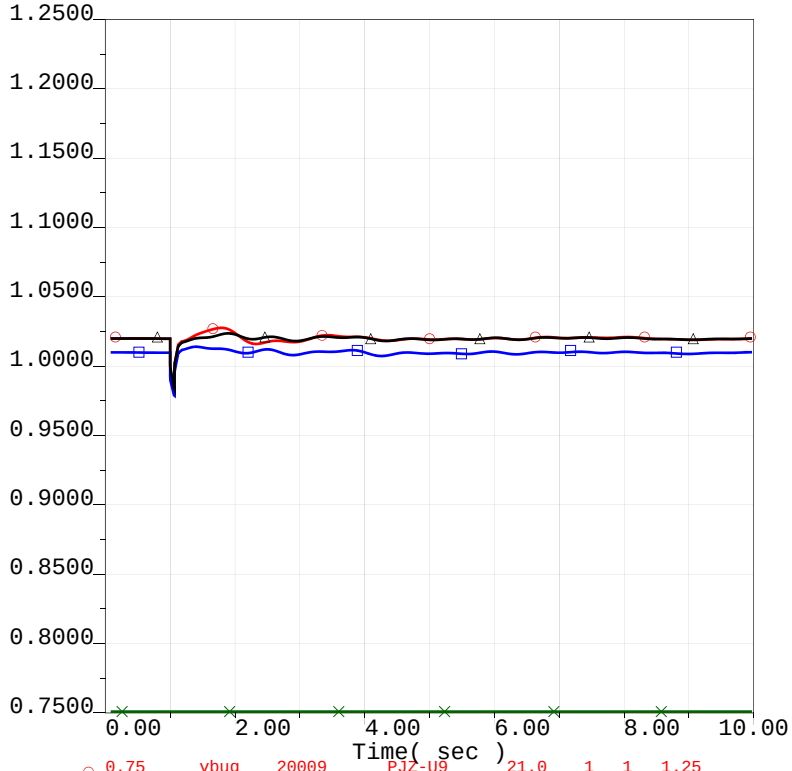
IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2a DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2a DISPATCH 3

CFE Busses Page 1

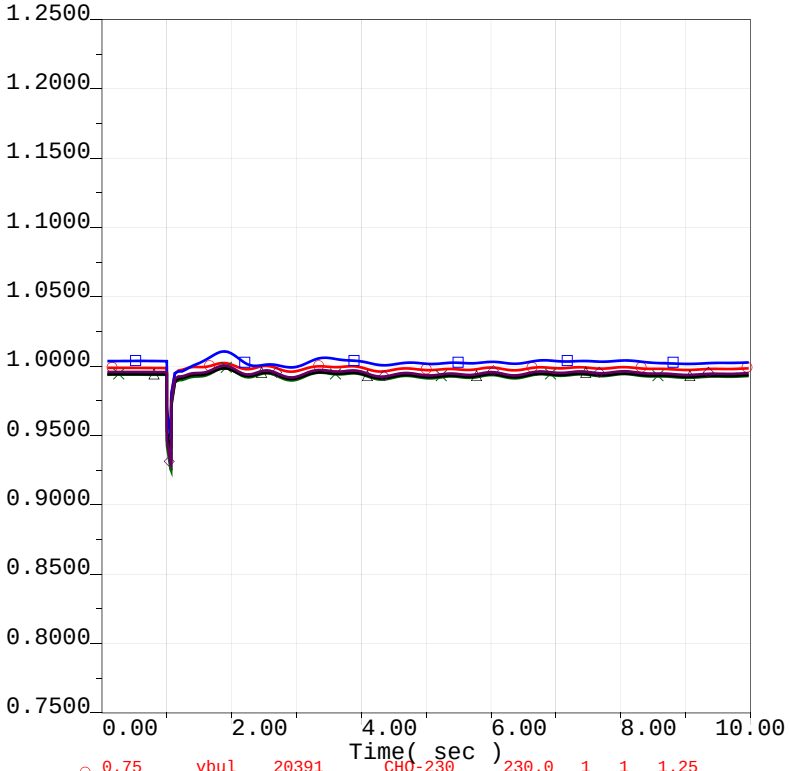


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2a DISPATCH 3

la_mpde_alt2a | Wed Jun 08 11:01:48 2005

CFE Busses Page 2

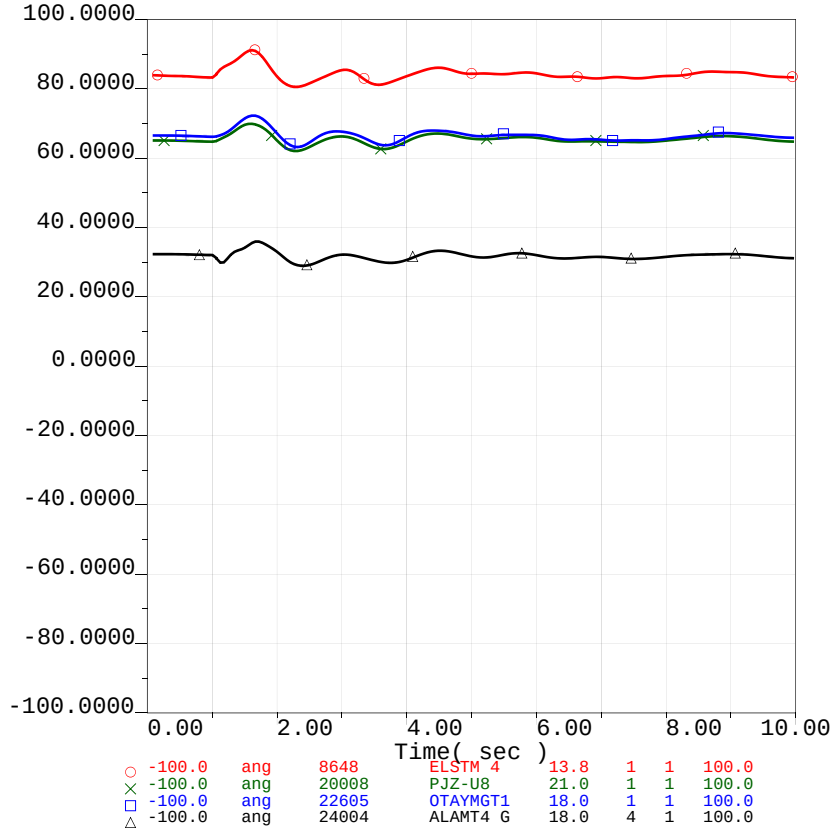


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2a DISPATCH 3

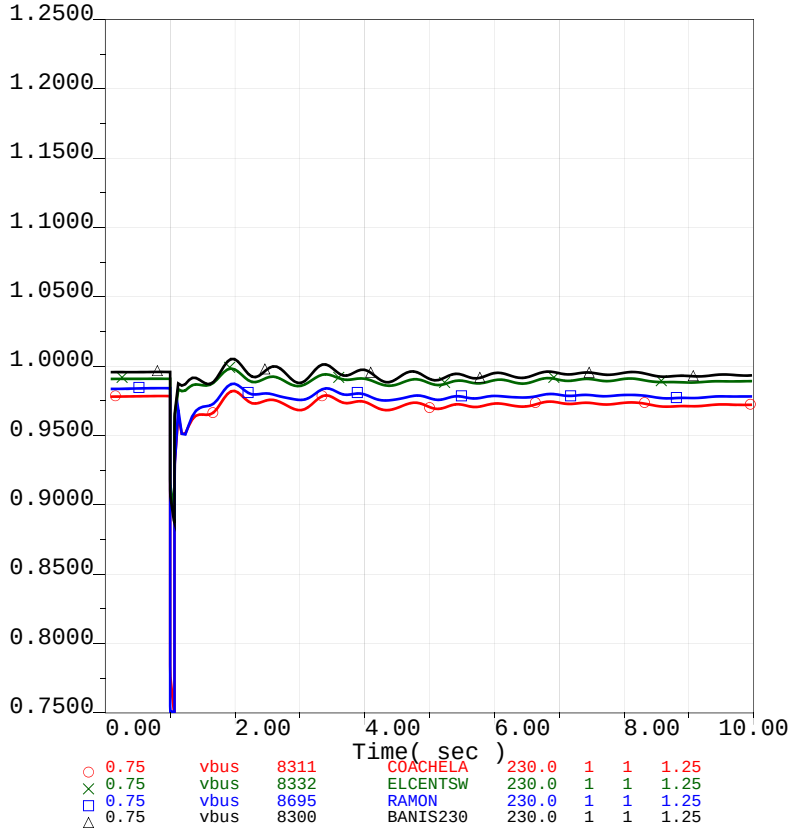
la_mpde_alt2a | Wed Jun 08 11:01:49 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 2a DISPATCH 3

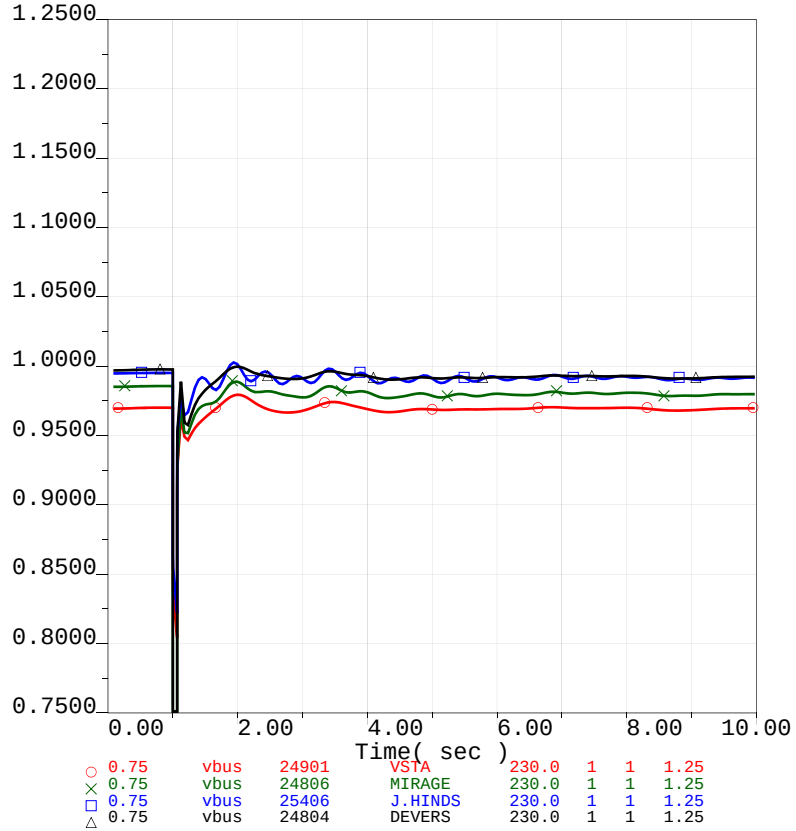
IID Busses



IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 3B DISPATCH 3

la_mpde_alt3b | Wed Jun 08 11:02:41 2005

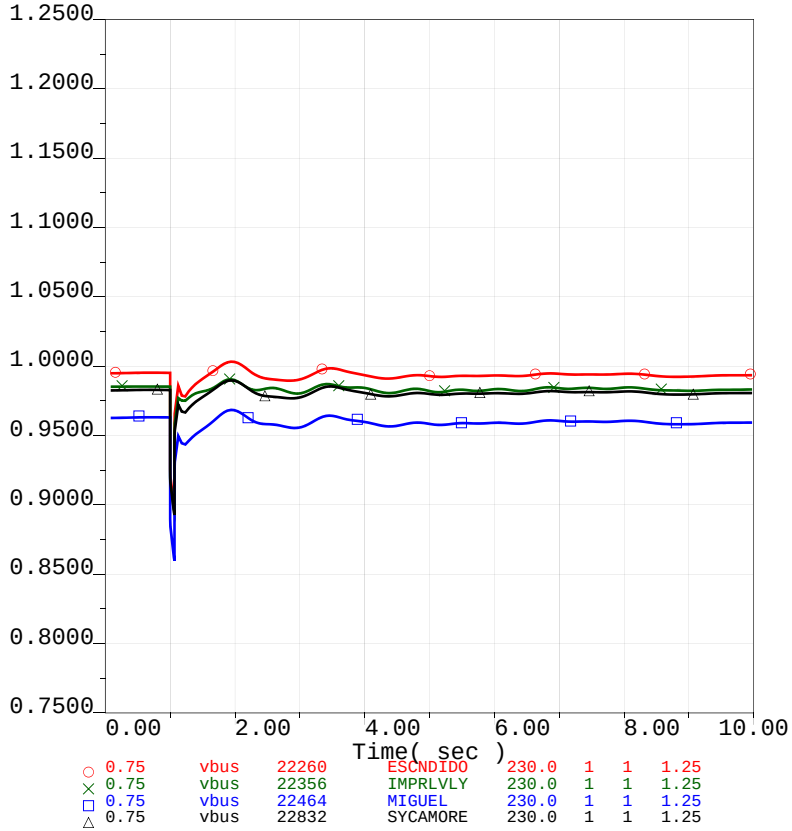
SCE Busses



IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 3B DISPATCH 3

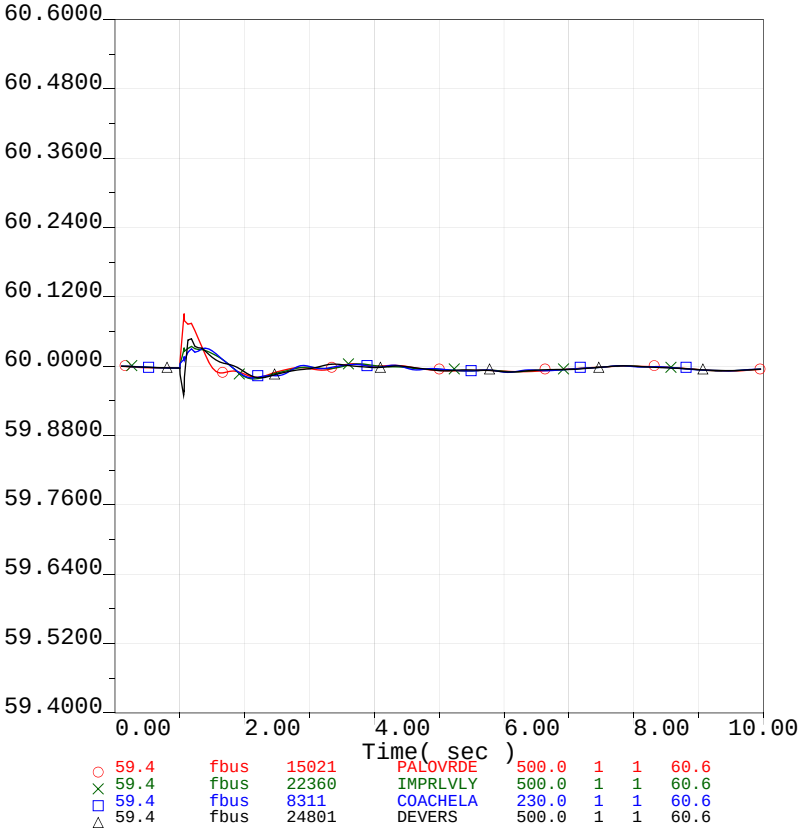
la_mpde_alt3b | Wed Jun 08 11:02:42 2005

SDGE Busses



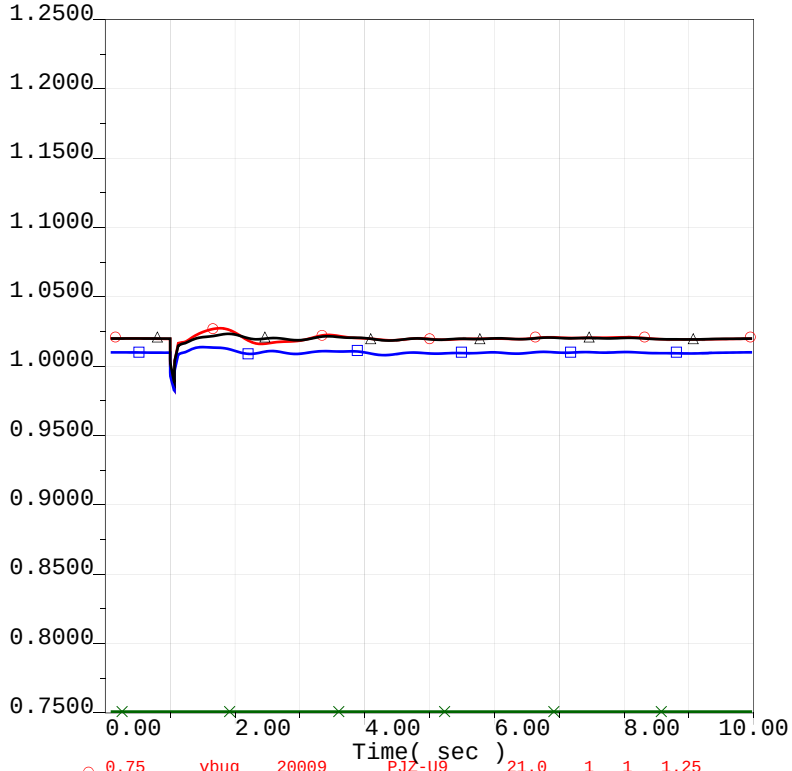
IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 3B DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 3B DISPATCH 3

CFE Busses Page 1

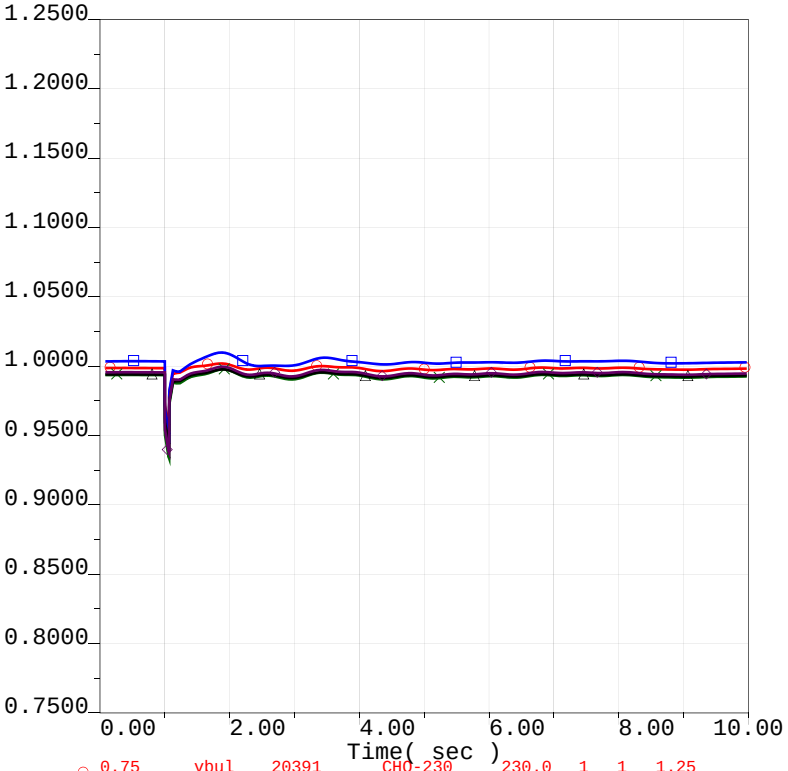


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 3B DISPATCH 3

la_mpde_alt3b | Wed Jun 08 11:02:44 2005

CFE Busses Page 2

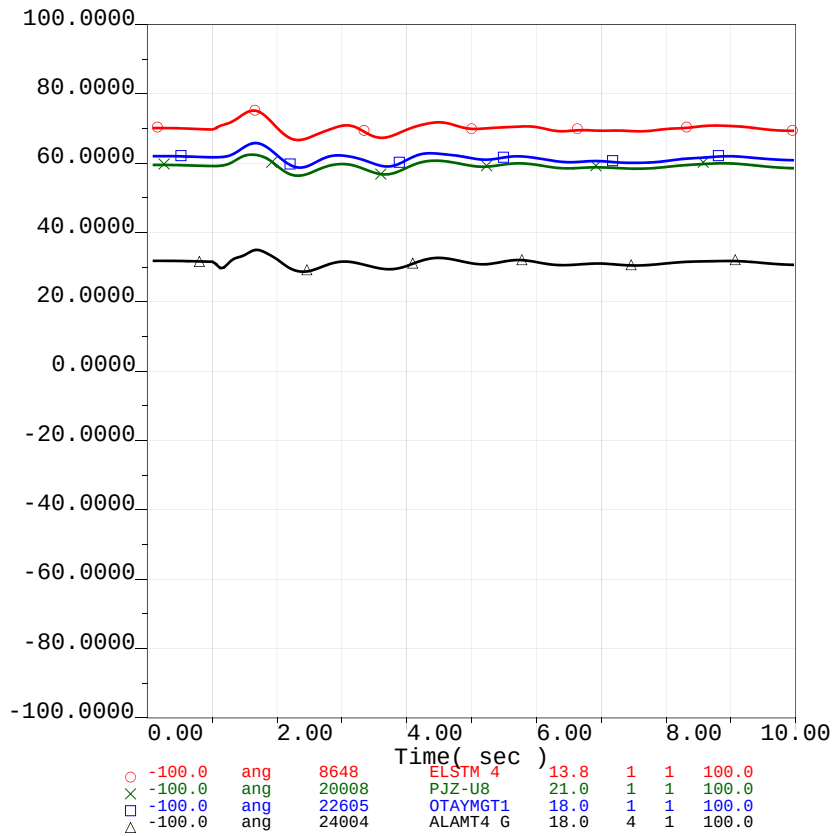


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 3B DISPATCH 3

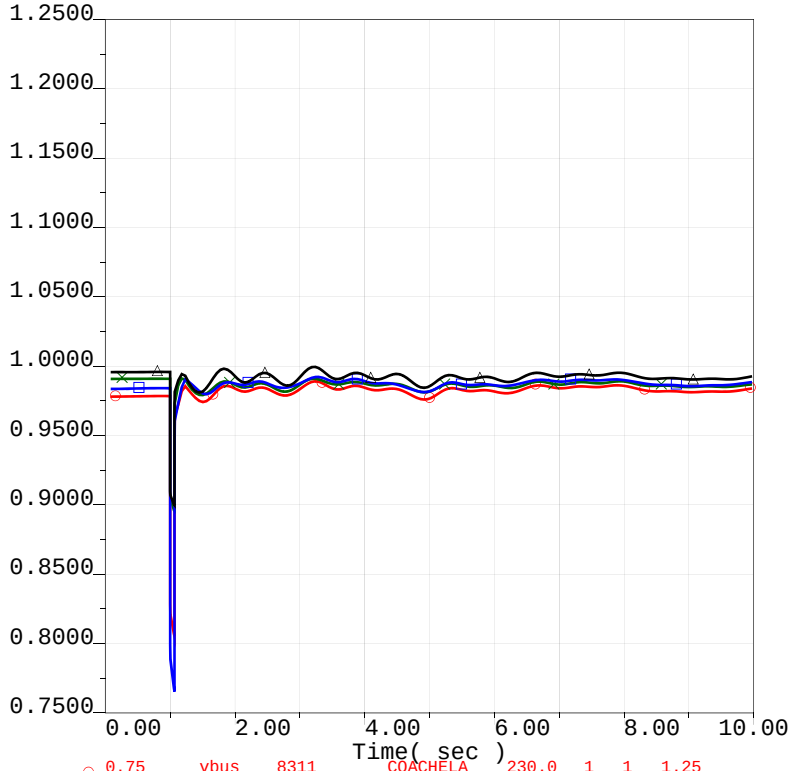
la_mpde_alt3b | Wed Jun 08 11:02:45 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip MIDPINTS - DEVERS 500 kV
Case ALT 3B DISPATCH 3

IID Busses

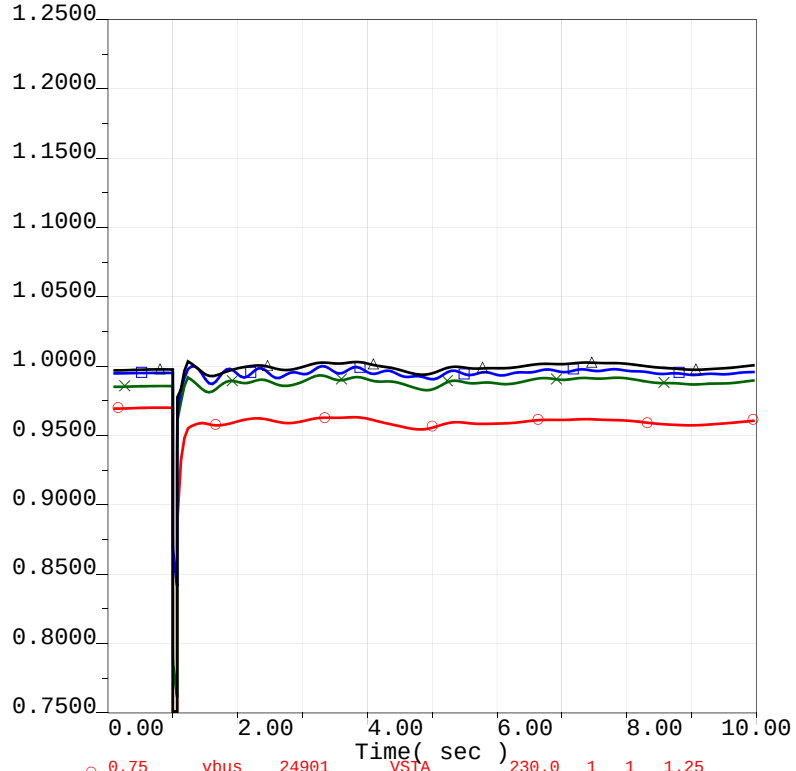


○ 0.75	vbus	8311	COACHELA	230.0	1	1	1.25
× 0.75	vbus	8332	ELCENTSW	230.0	1	1	1.25
□ 0.75	vbus	8695	RAMON	230.0	1	1	1.25
△ 0.75	vbus	8300	BANIS230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 3

la_seva_alt3 | Wed Jun 08 12:35:51 2005

SCE Busses

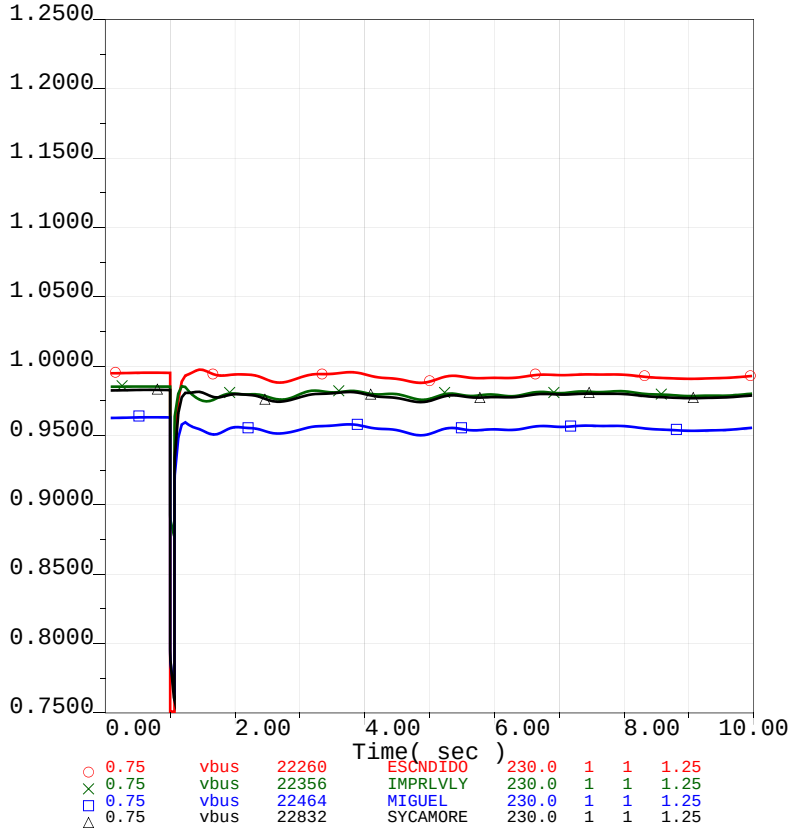


○ 0.75	vbus	24901	VSTA	230.0	1	1	1.25
× 0.75	vbus	24806	MIRAGE	230.0	1	1	1.25
□ 0.75	vbus	25406	J.HINDS	230.0	1	1	1.25
△ 0.75	vbus	24804	DEVERS	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 3

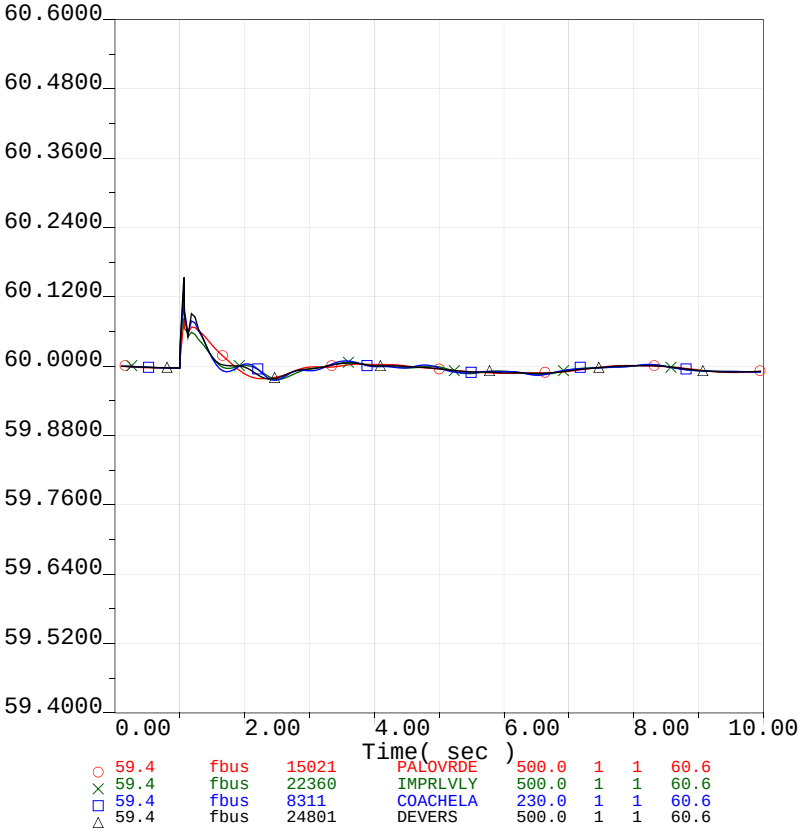
la_seva_alt3 | Wed Jun 08 12:35:52 2005

SDGE Busses



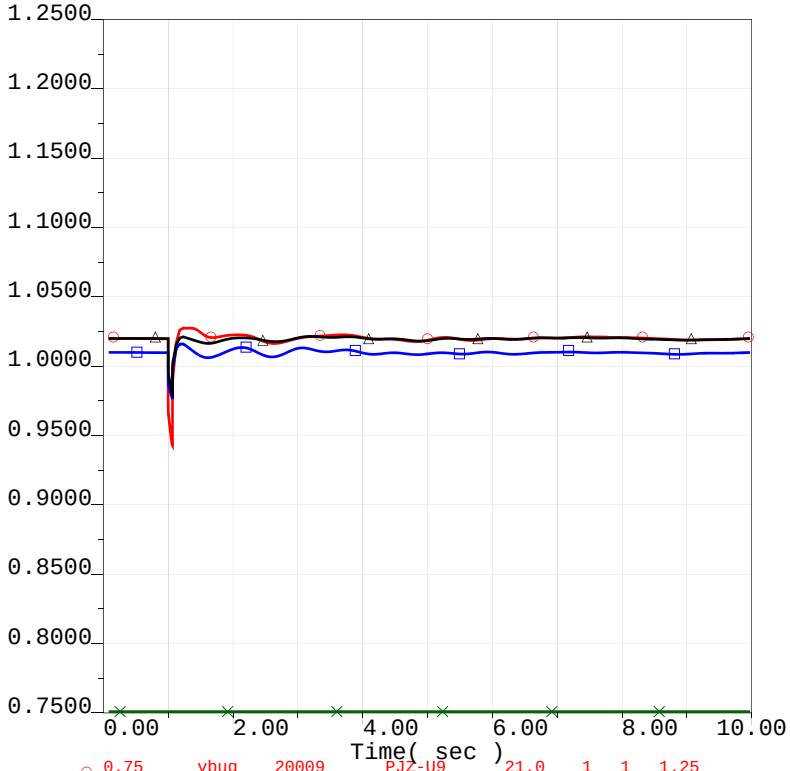
IVSG STUDY
Light Autumn Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 3

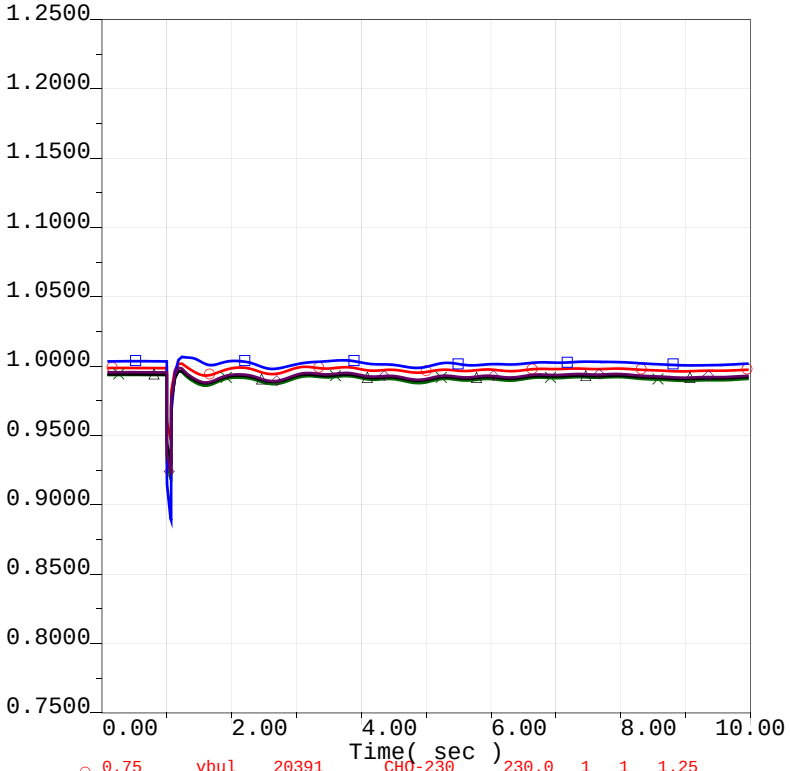
CFE Busses Page 1



○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 3

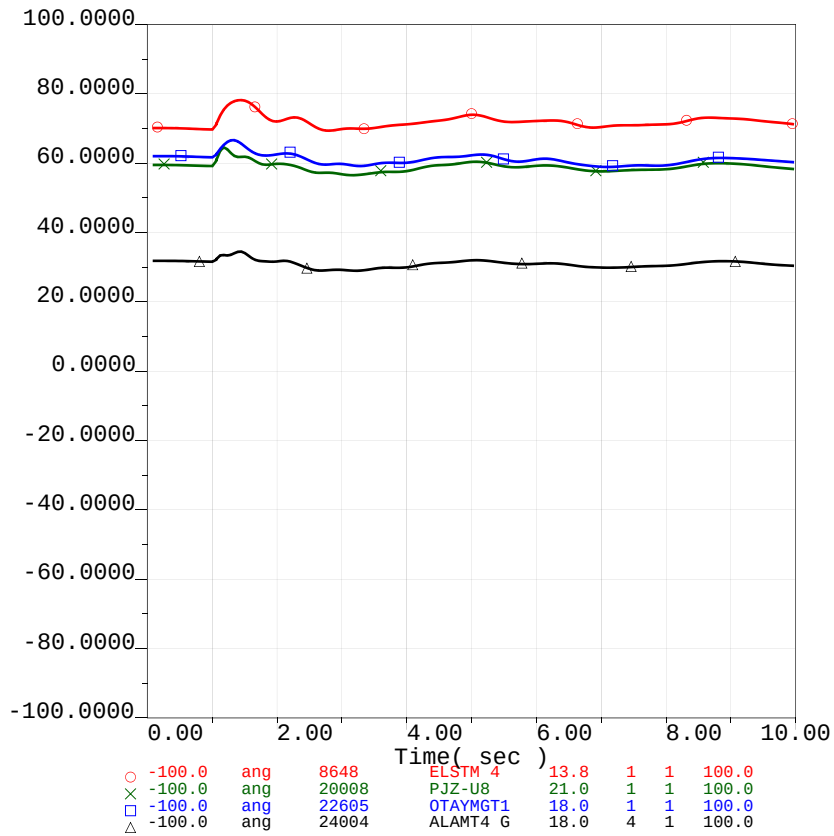
CFE Busses Page 2



○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

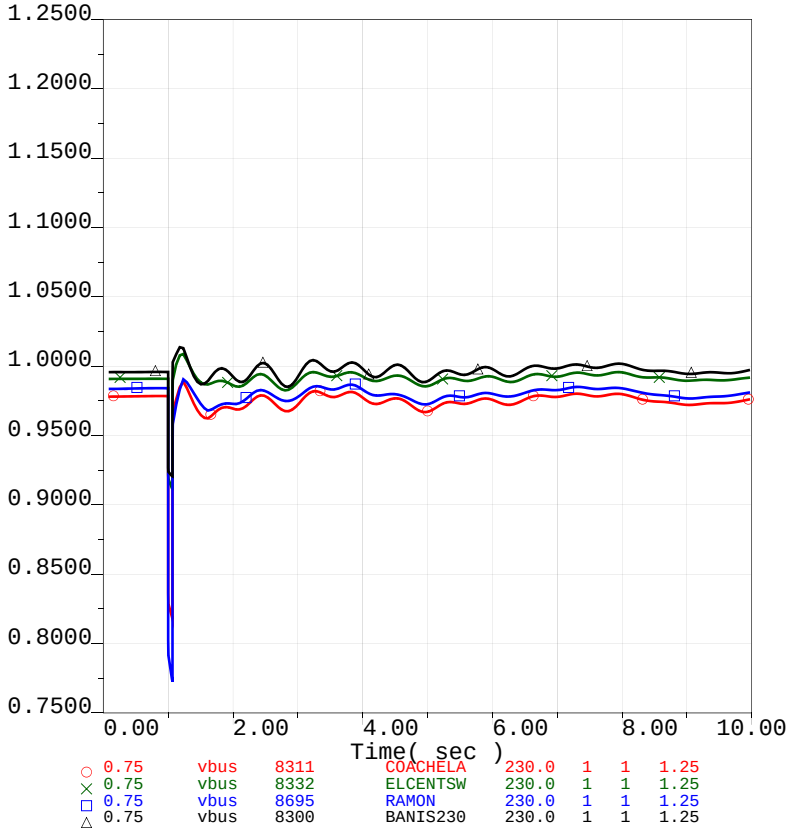
IVSG STUDY
Light Autumn Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 3

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip SerVal - Valley 500 kV
Case ALT 3b DISPATCH 3

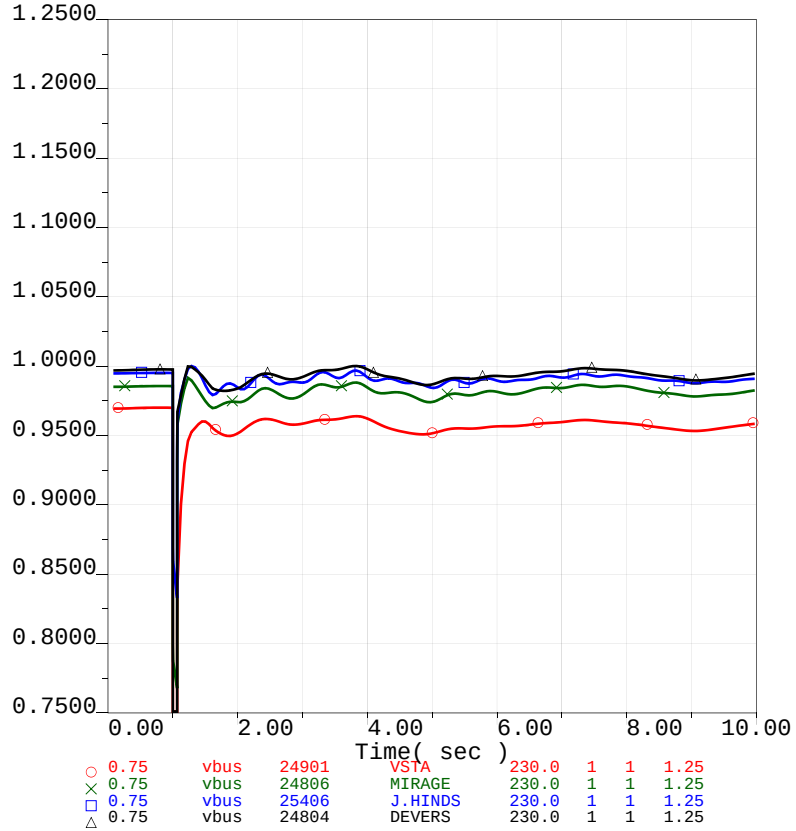
IID Busses



IVSG STUDY
Light Autumn Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 3

la_sesv_alt3 | Wed Jun 08 12:35:02 2005

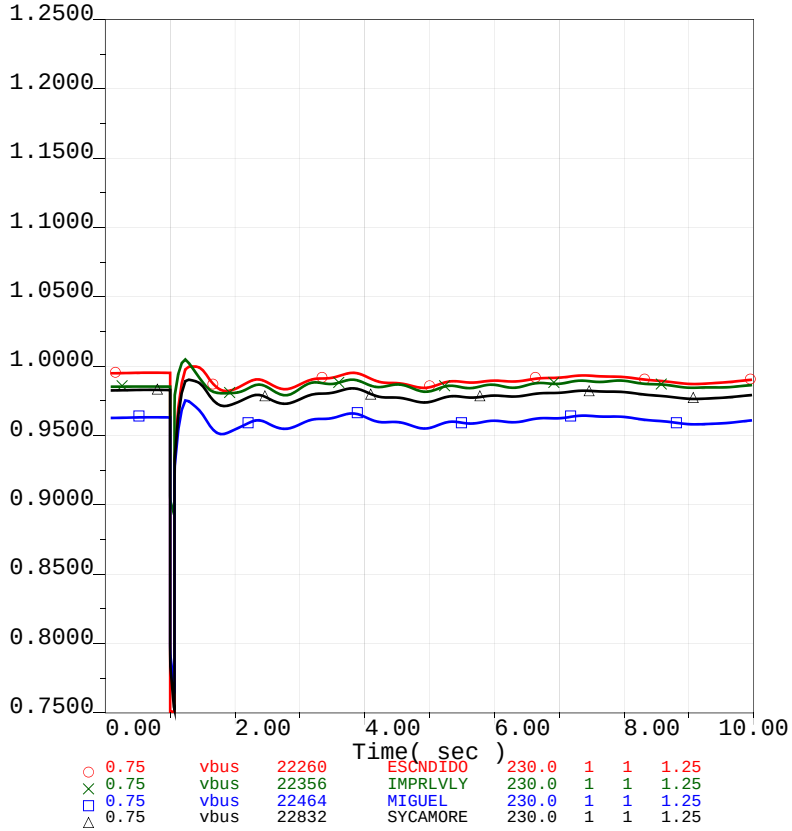
SCE Busses



IVSG STUDY
Light Autumn Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 3

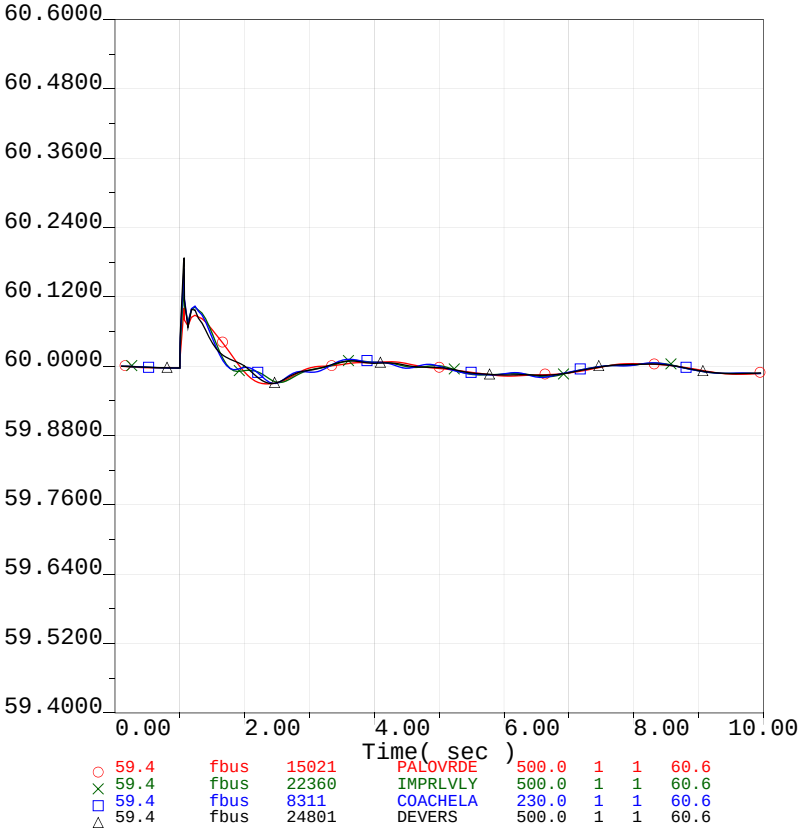
la_sesv_alt3 | Wed Jun 08 12:35:03 2005

SDGE Busses



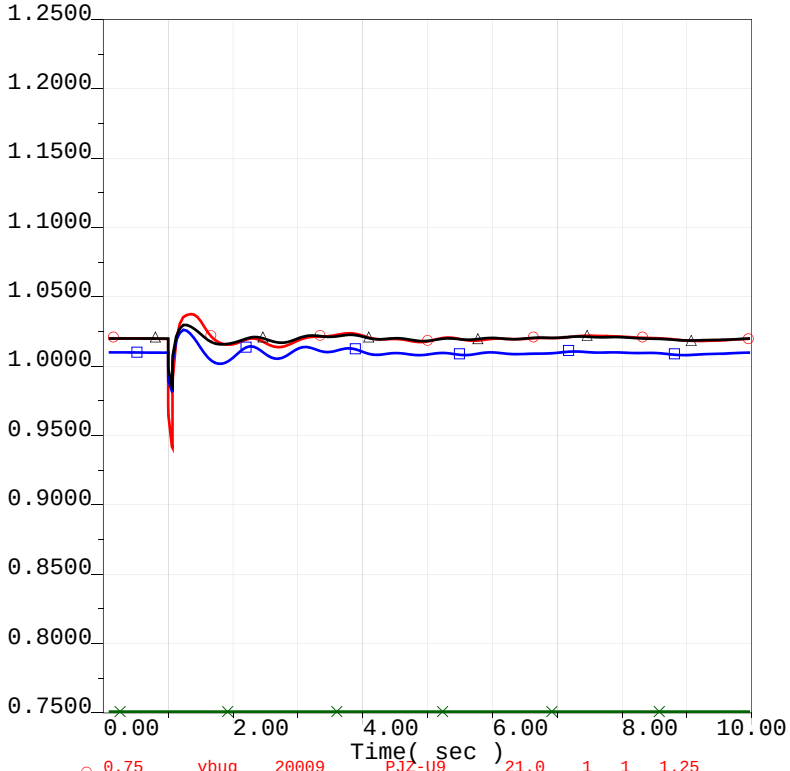
IVSG STUDY
Light Autumn Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 3

CFE Busses Page 1

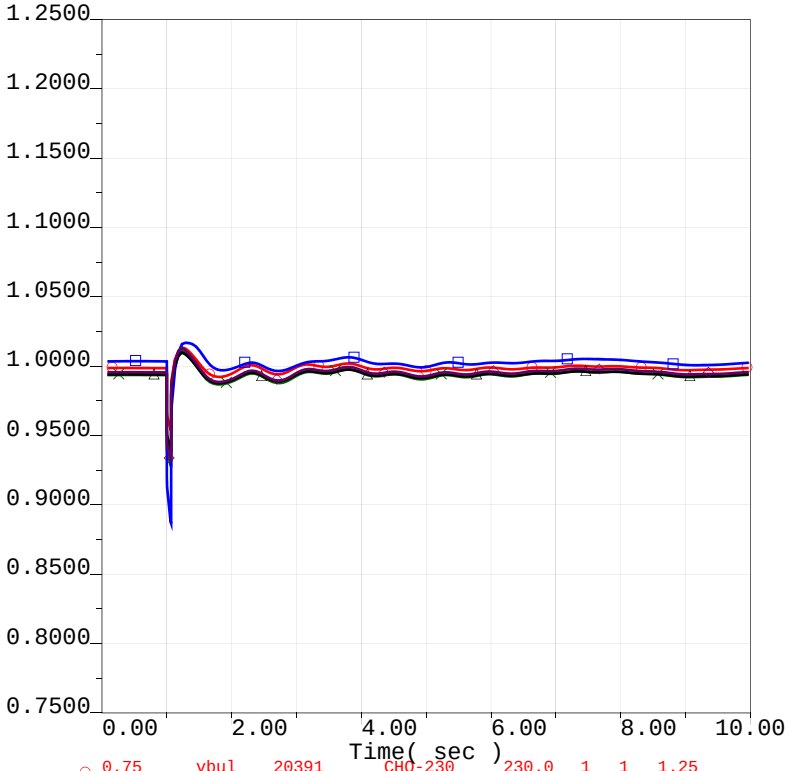


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 3

la_sesv_alt3 | Wed Jun 08 12:35:05 2005

CFE Busses Page 2

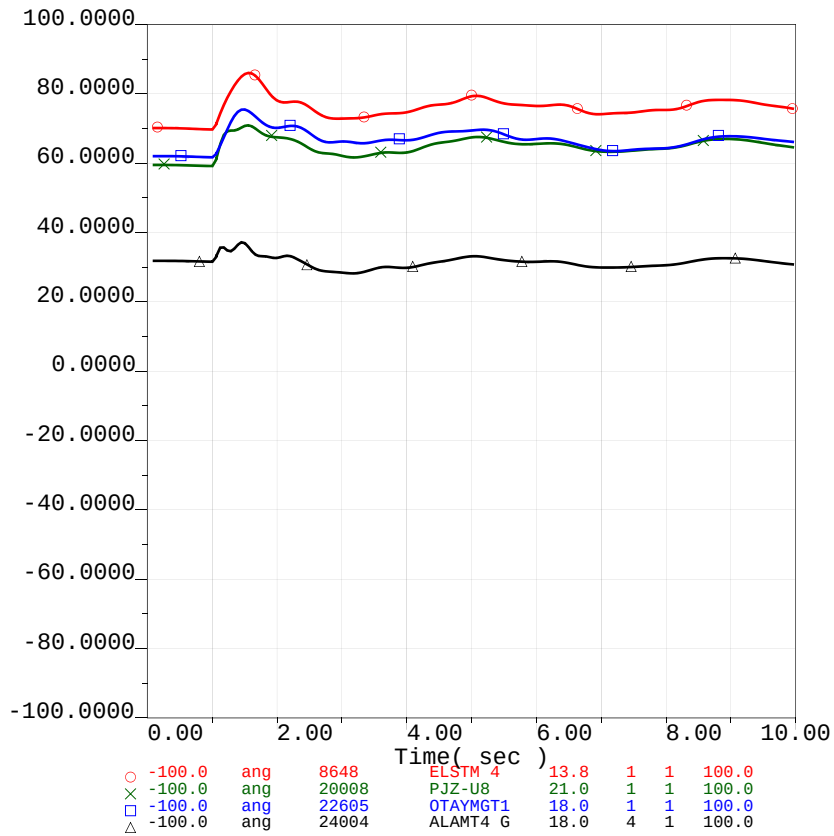


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 3

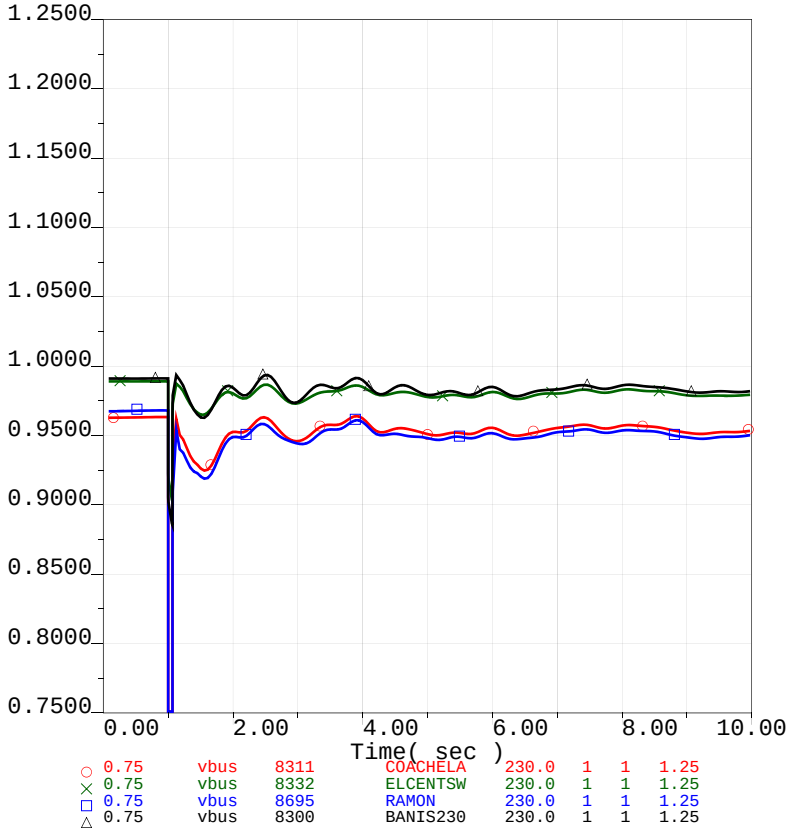
la_sesv_alt3 | Wed Jun 08 12:35:06 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip Serrano - SerVal 500 kV
Case ALT 3b DISPATCH 3

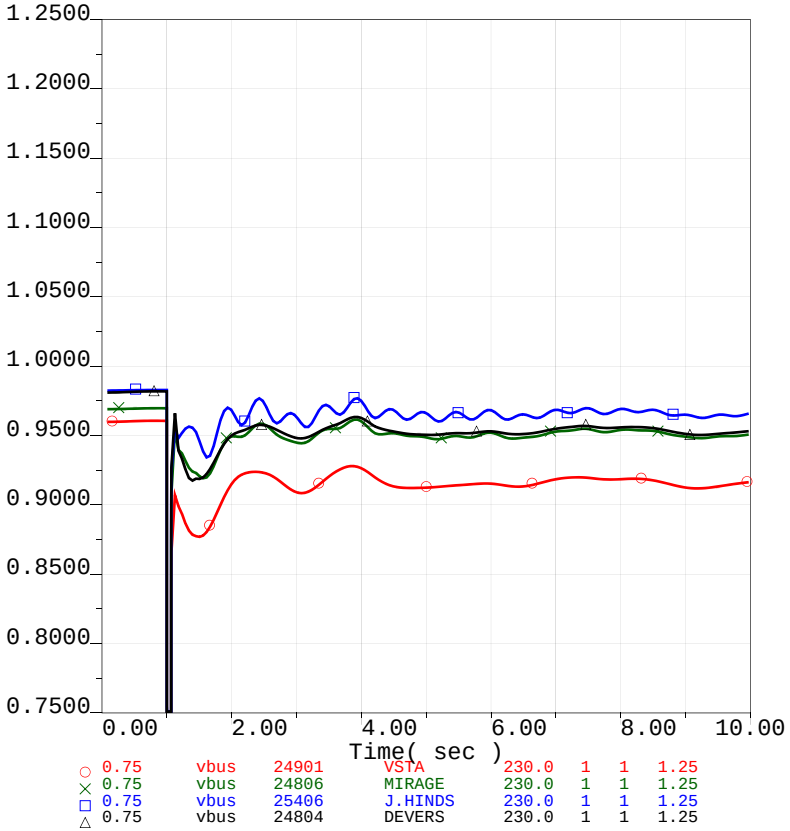
IID Busses



IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 3

la_deva_alt2 | Wed Jun 08 09:57:40 2005

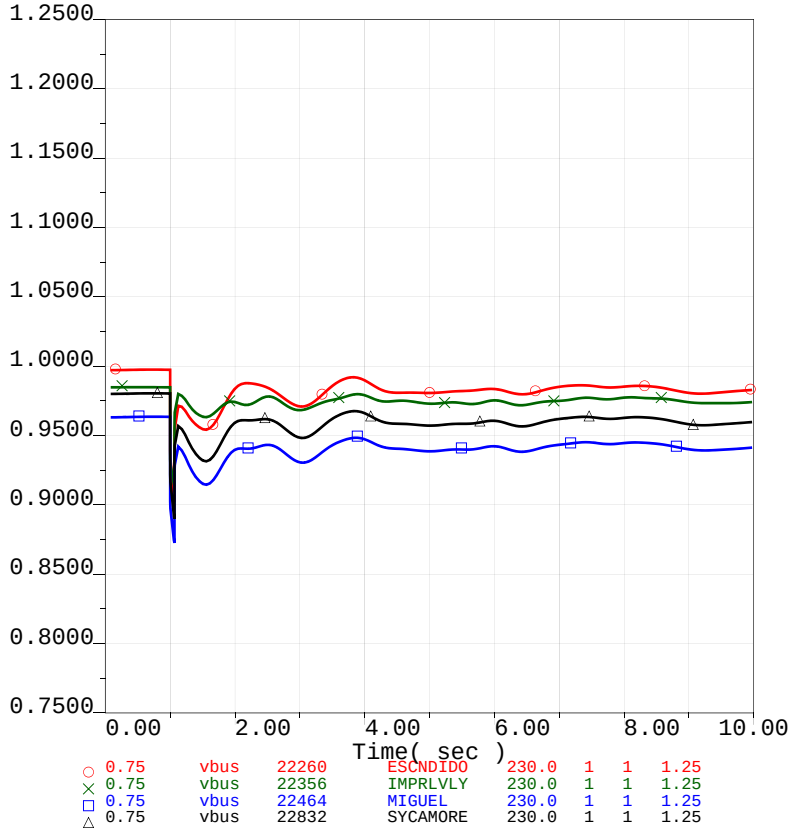
SCE Busses



IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 3

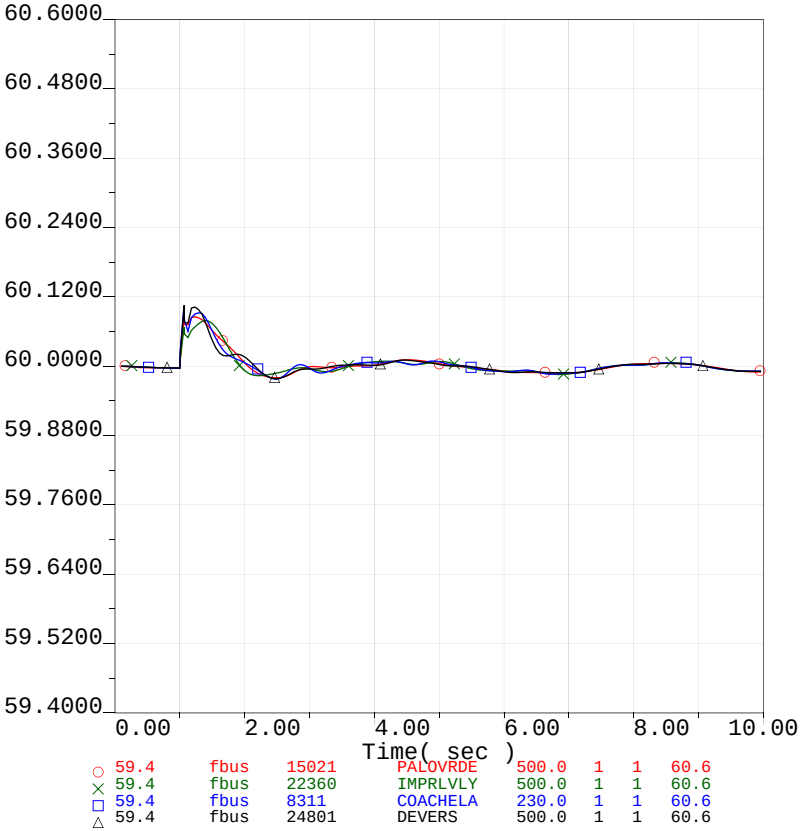
la_deva_alt2 | Wed Jun 08 09:57:41 2005

SDGE Busses



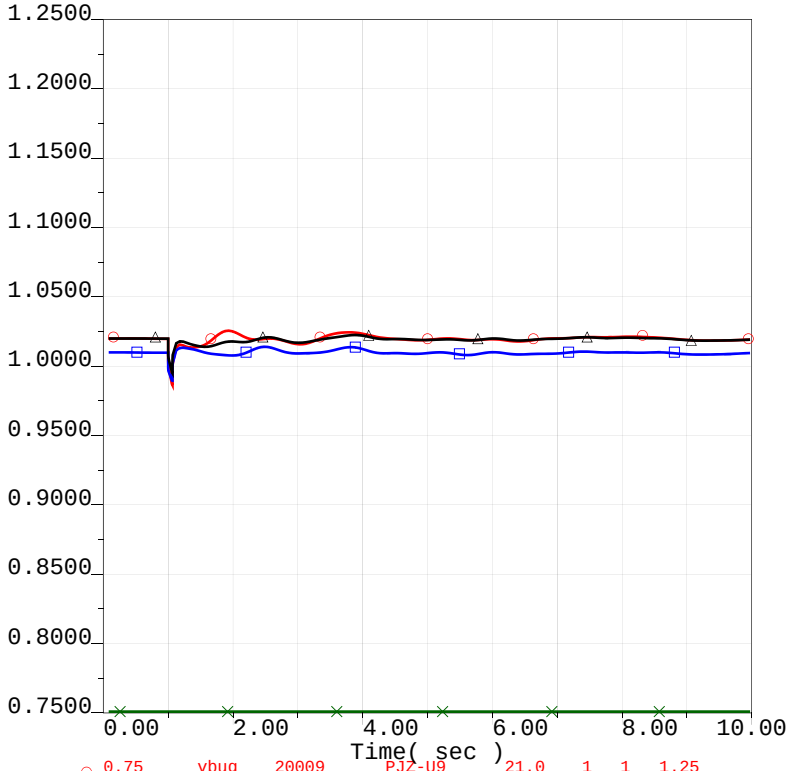
IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 3

CFE Busses Page 1

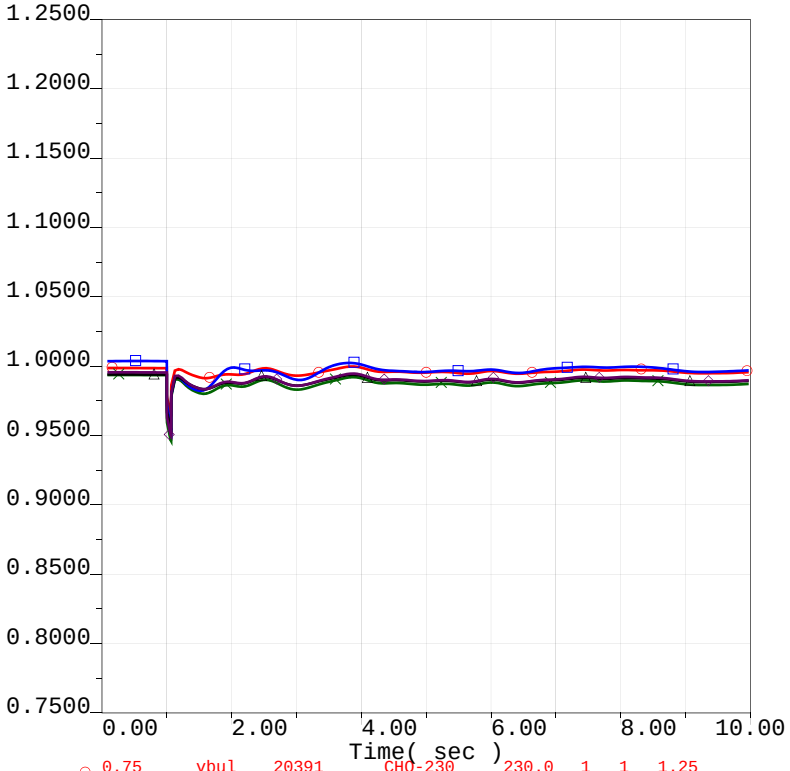


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 3

la_deva_alt2 | Wed Jun 08 09:57:43 2005

CFE Busses Page 2

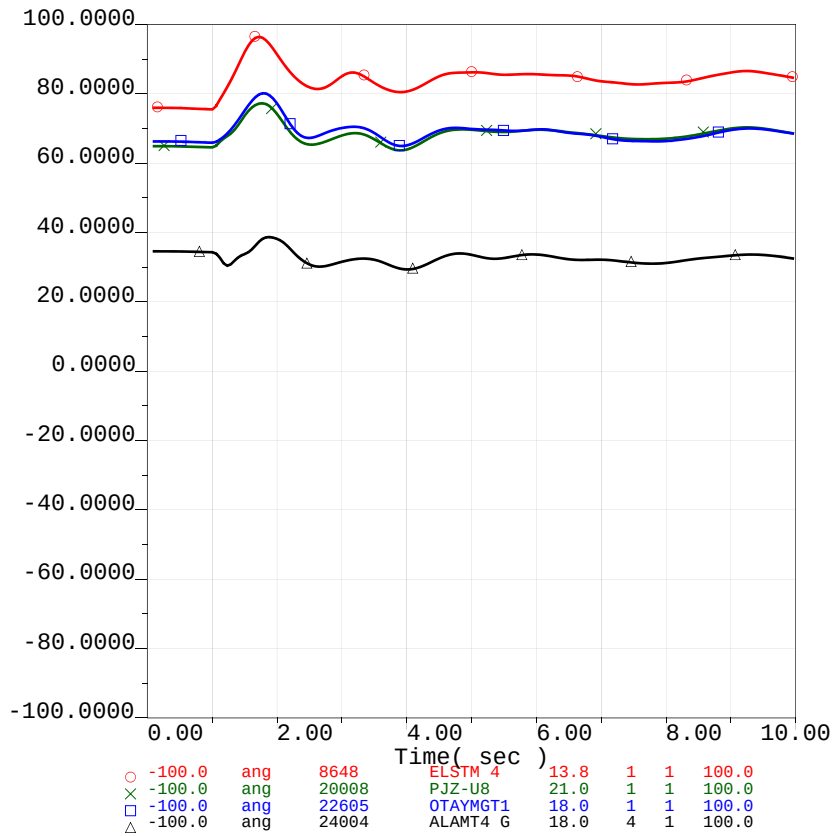


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 3

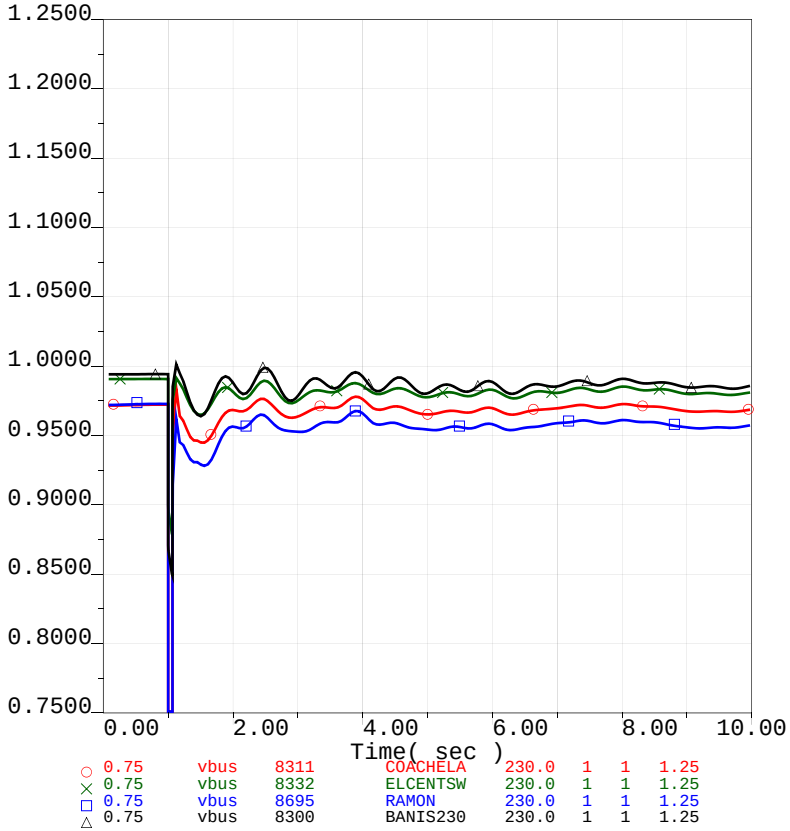
la_deva_alt2 | Wed Jun 08 09:57:44 2005

Rotor Angles for Gen Busses



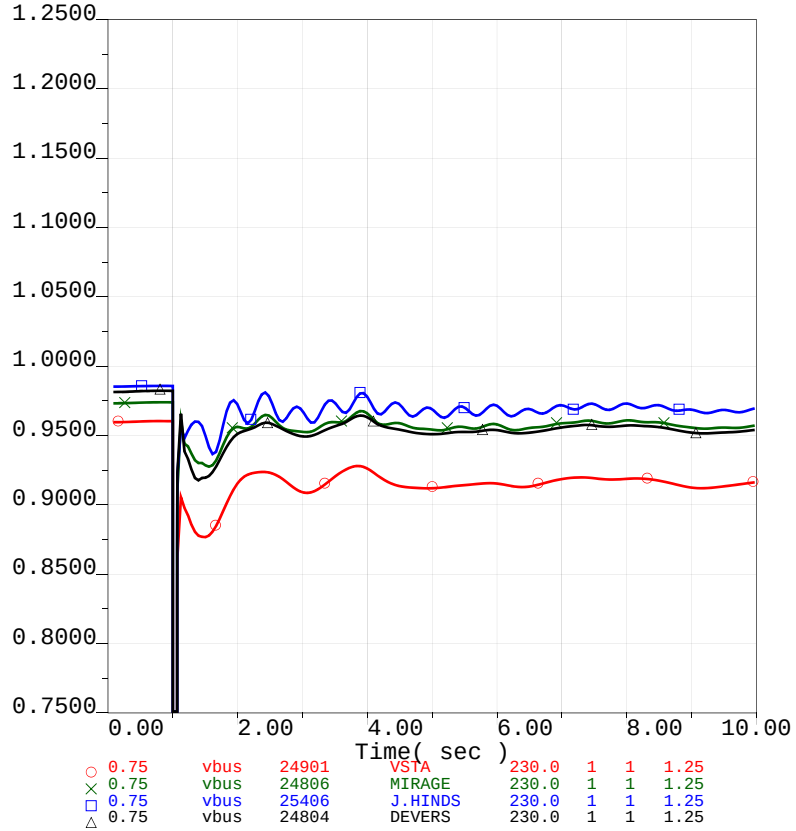
IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2 DISPATCH 3

IID Busses



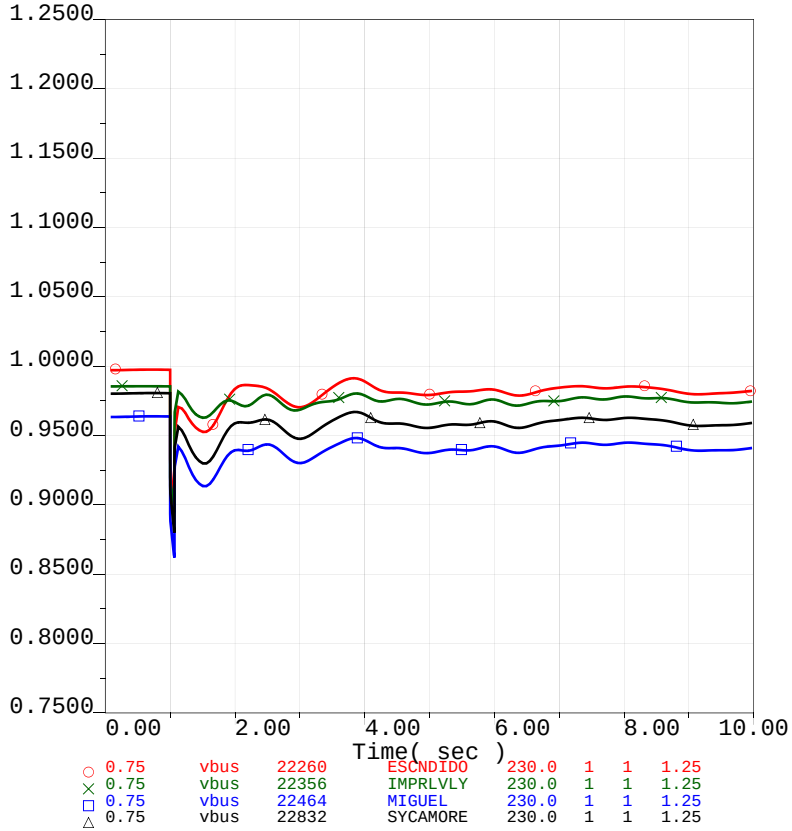
IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2a DISPATCH 3

SCE Busses



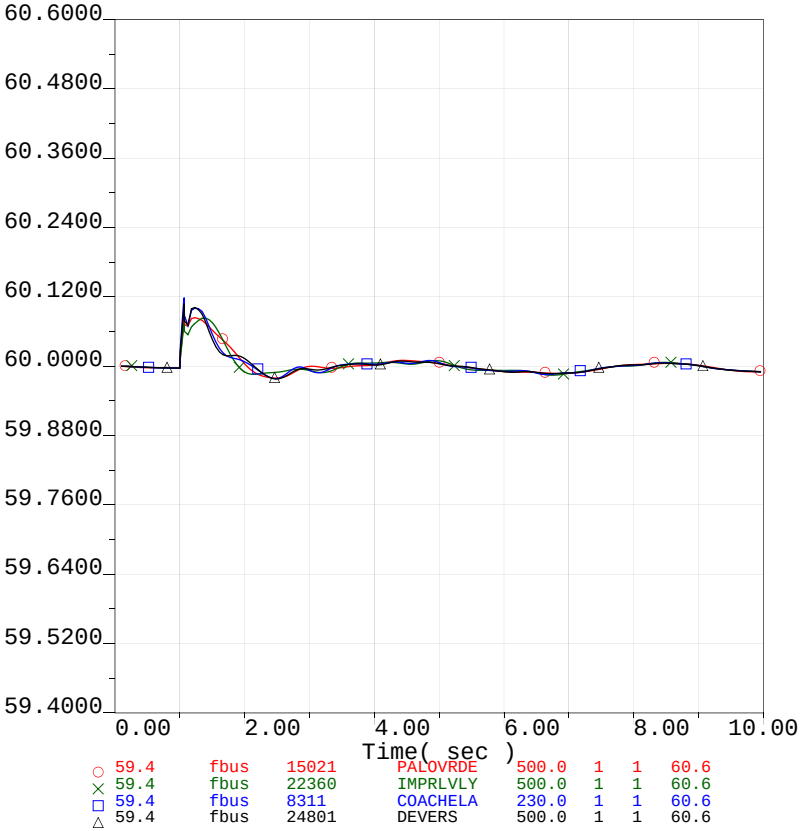
IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2a DISPATCH 3

SDGE Busses



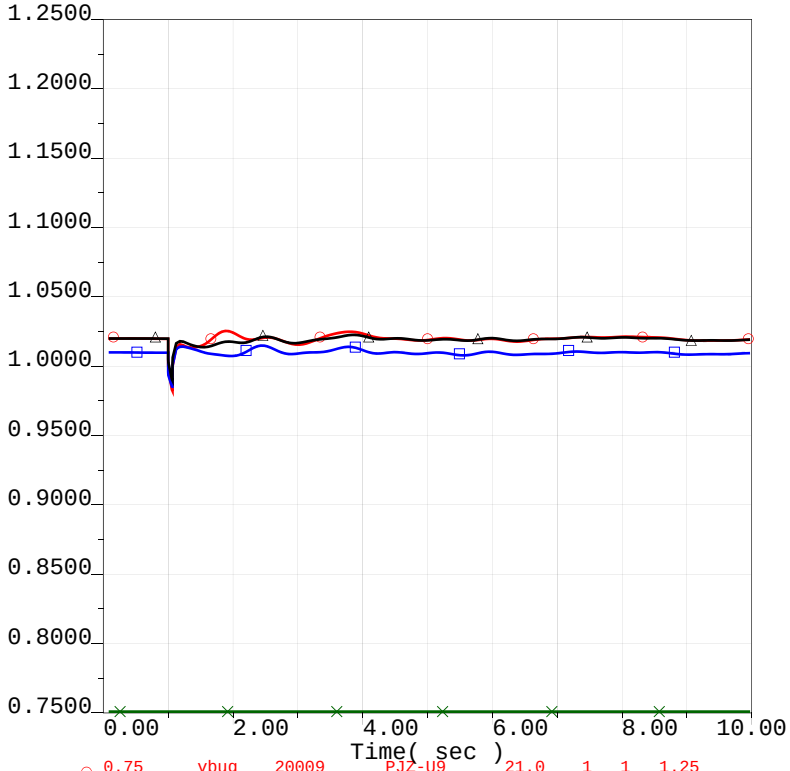
IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2a DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2a DISPATCH 3

CFE Busses Page 1

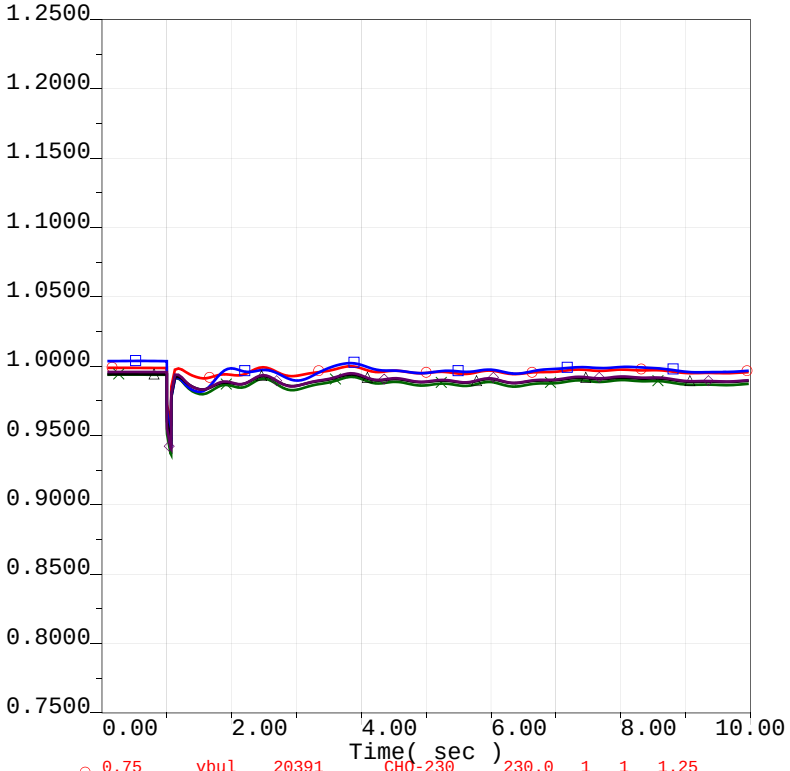


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2a DISPATCH 3

la_deva_alt2a | Wed Jun 08 10:33:50 2005

CFE Busses Page 2

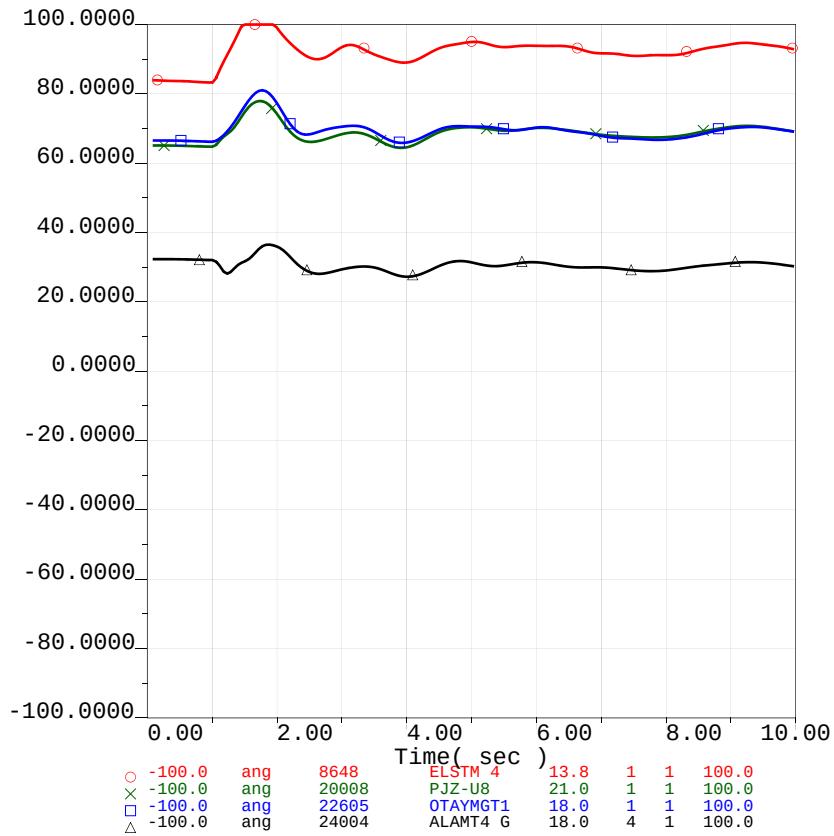


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2a DISPATCH 3

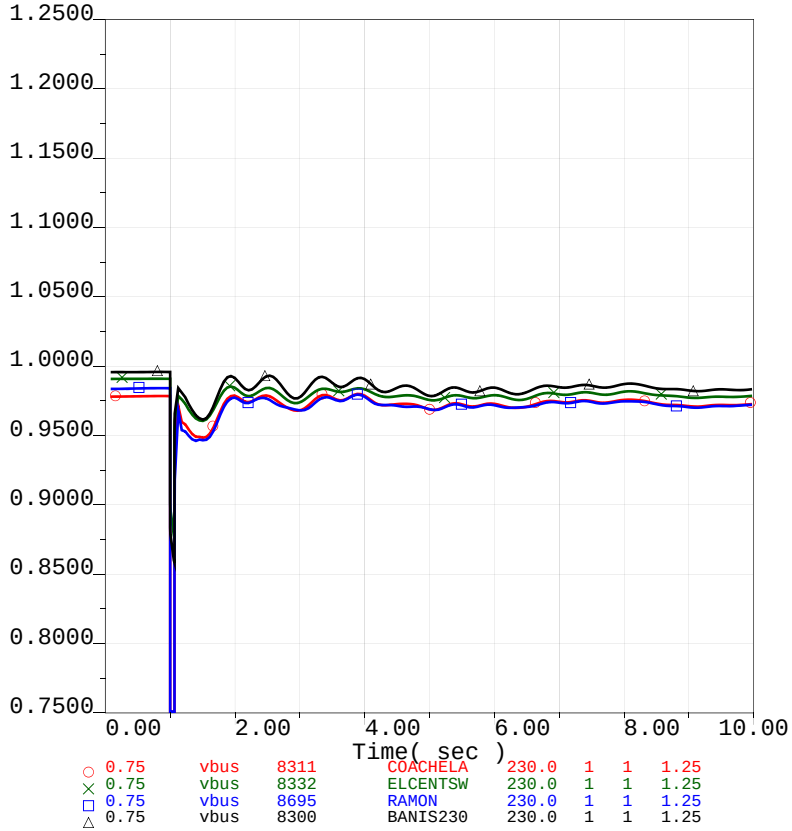
la_deva_alt2a | Wed Jun 08 10:33:51 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 2a DISPATCH 3

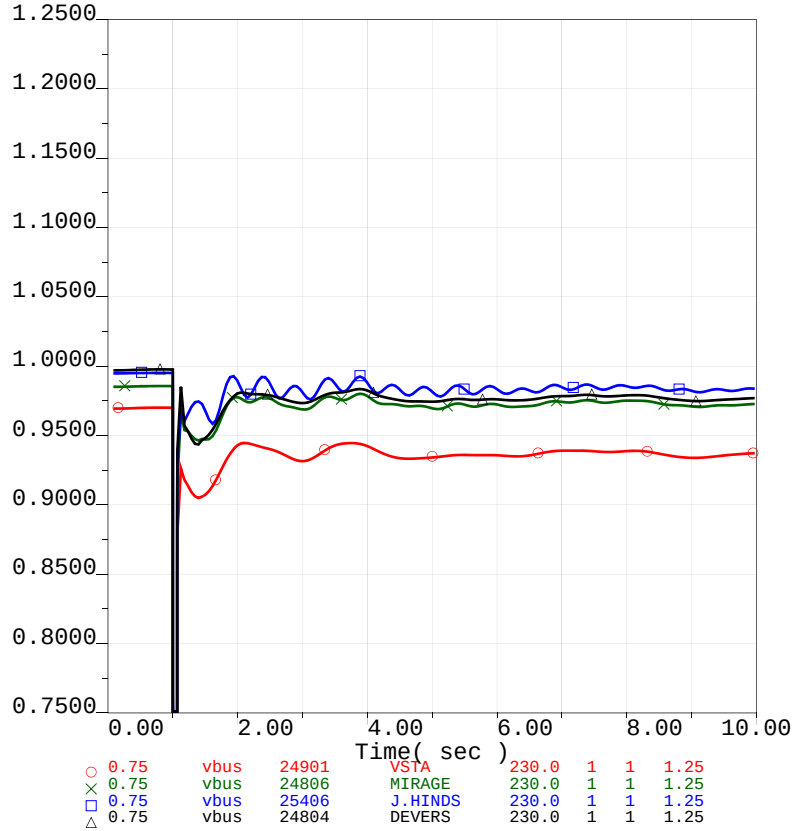
IID Busses



IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 3

la_deva_alt3b | Wed Jun 08 10:53:16 2005

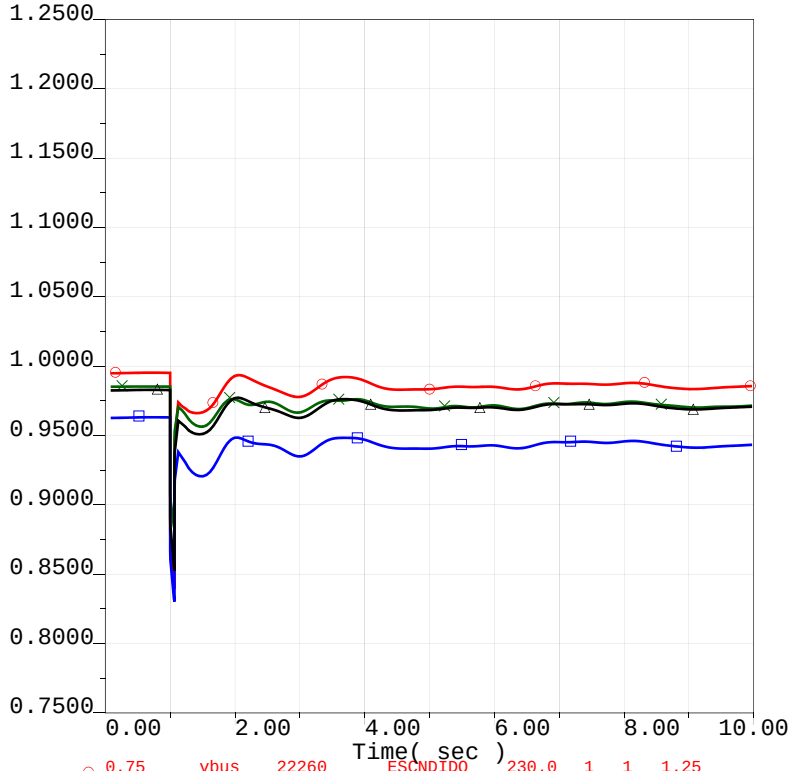
SCE Busses



IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 3

la_deva_alt3b | Wed Jun 08 10:53:17 2005

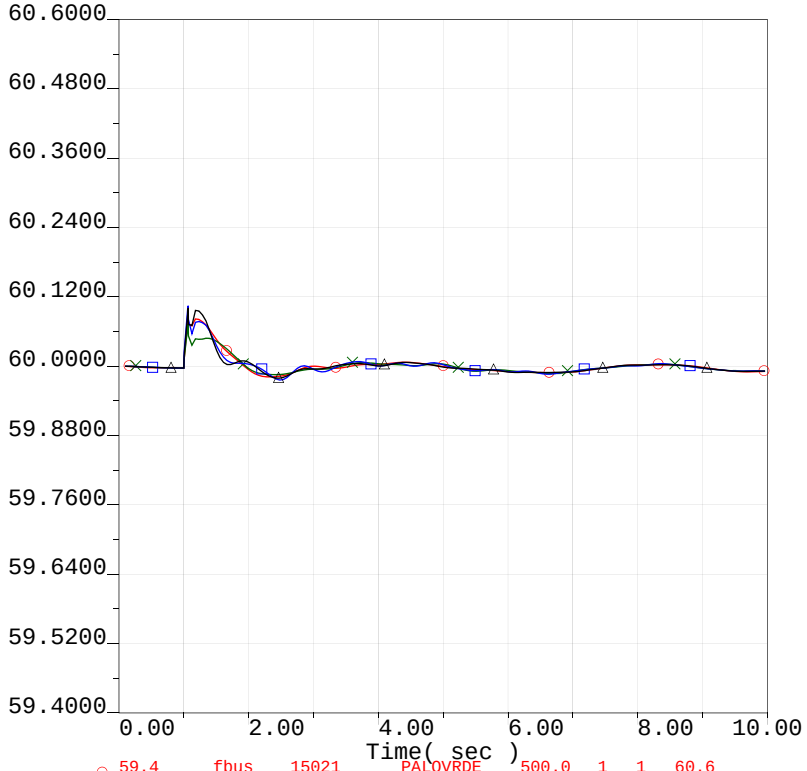
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 3

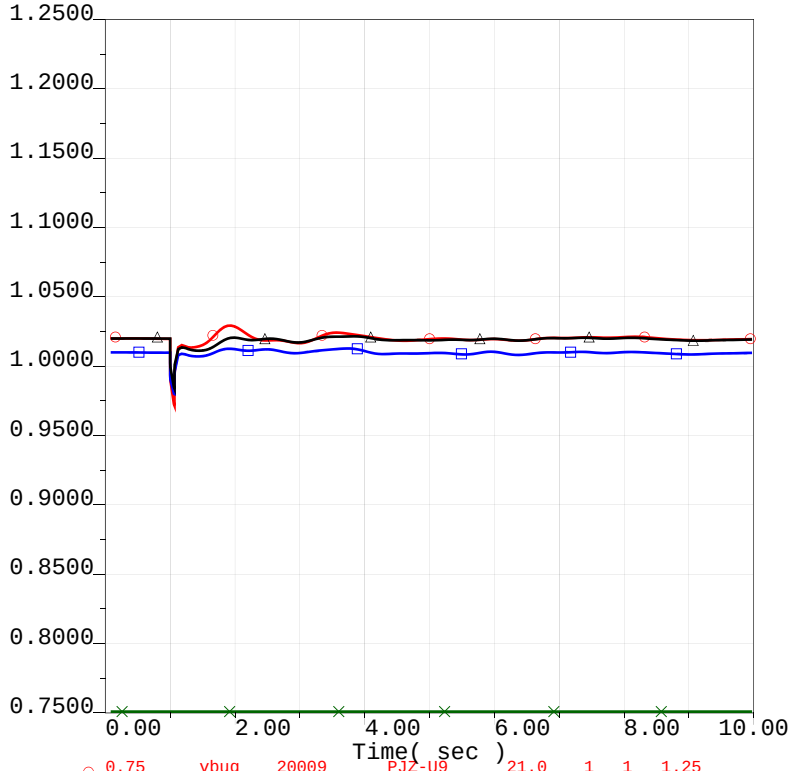
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 3

CFE Busses Page 1

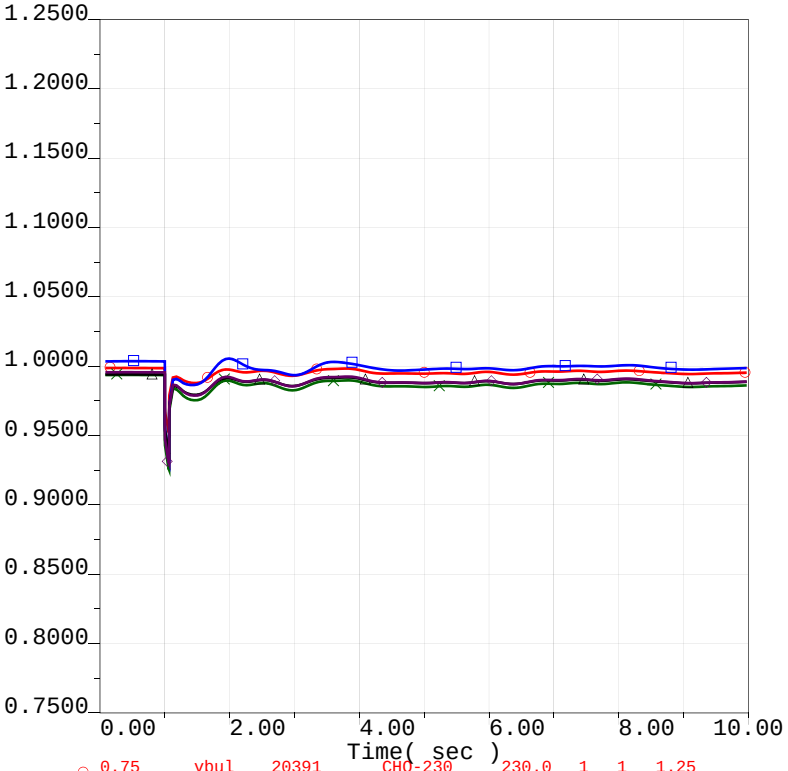


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 3

la_deva_alt3b | Wed Jun 08 10:53:19 2005

CFE Busses Page 2

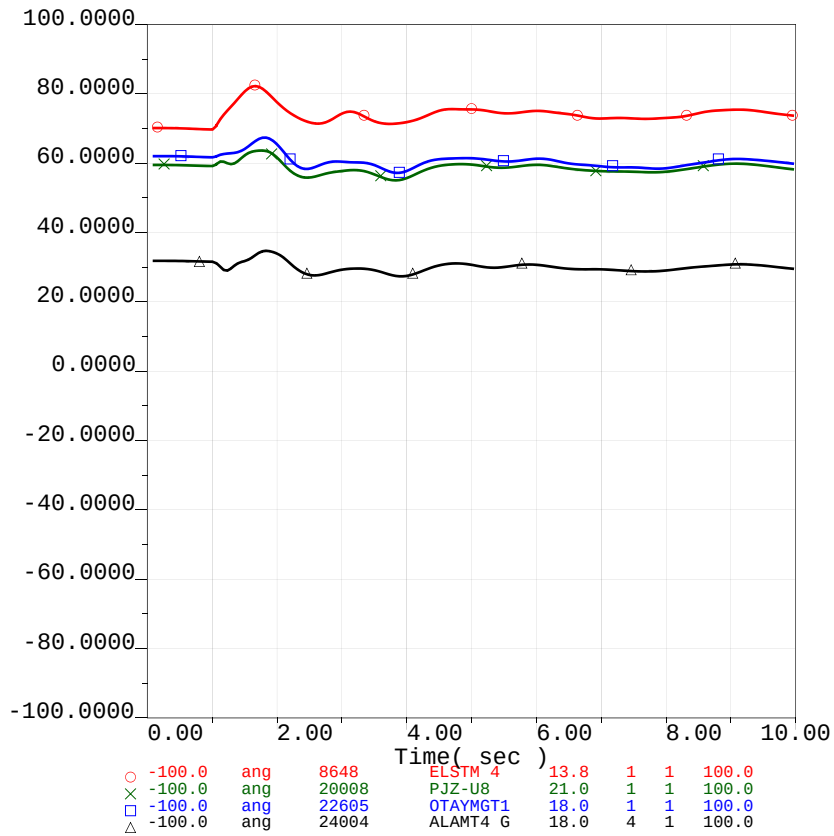


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 3

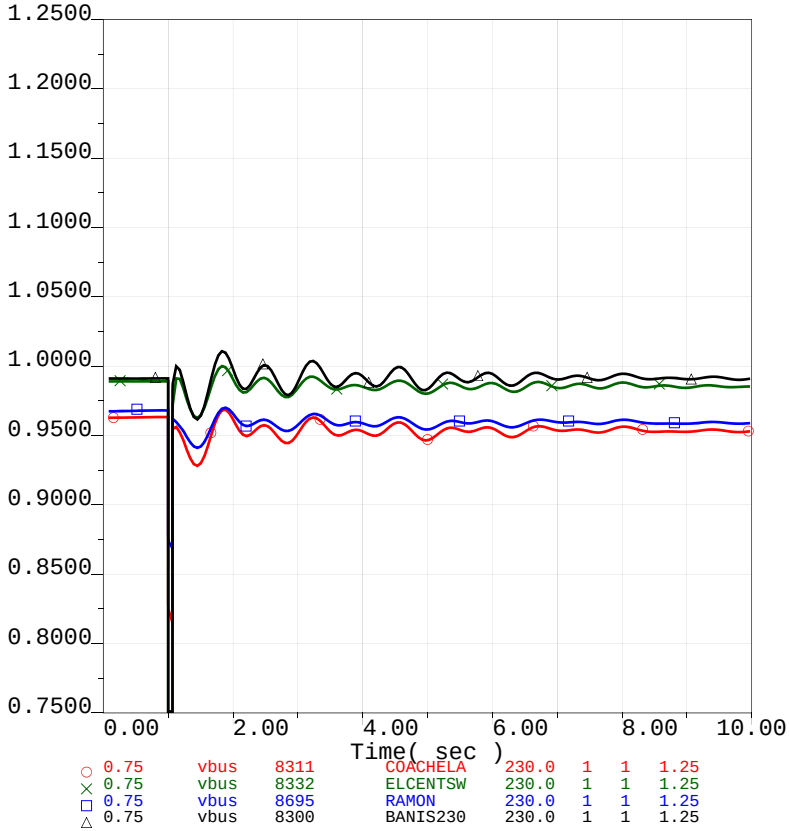
la_deva_alt3b | Wed Jun 08 10:53:20 2005

Rotor Angles for Gen Busses



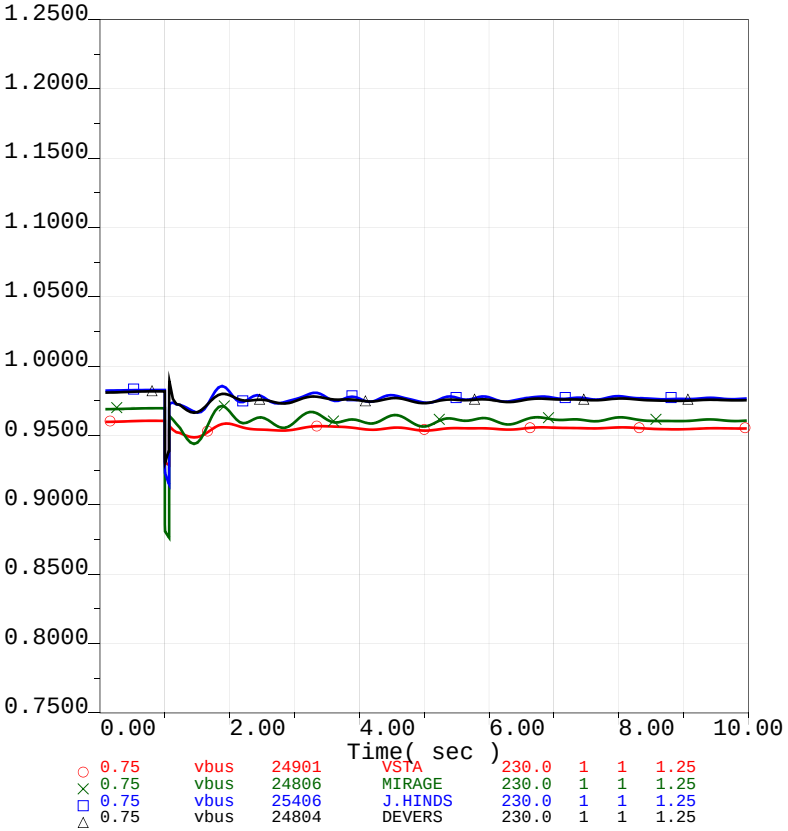
IVSG STUDY
Light Autumn Case
Trip Devers - Valley 500 kV
Case ALT 3B DISPATCH 3

IID Busses



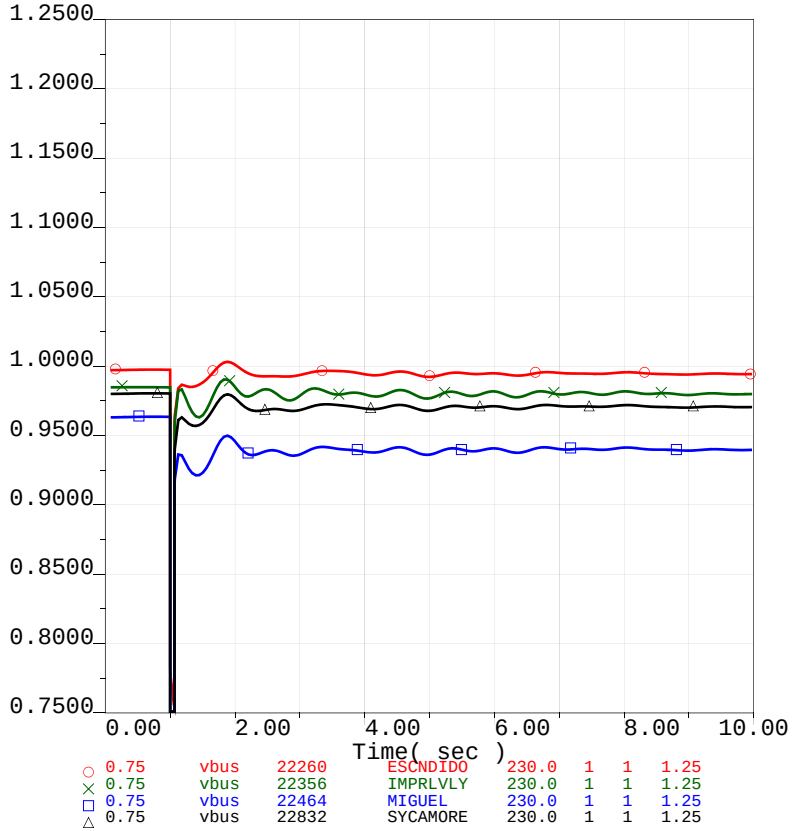
IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 3

SCE Busses



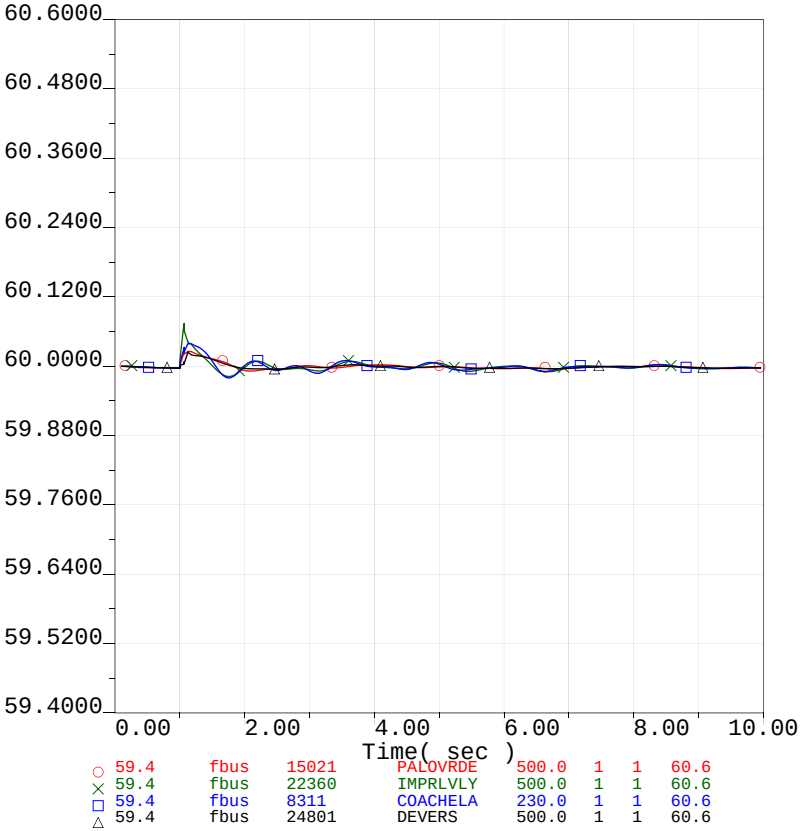
IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 3

SDGE Busses



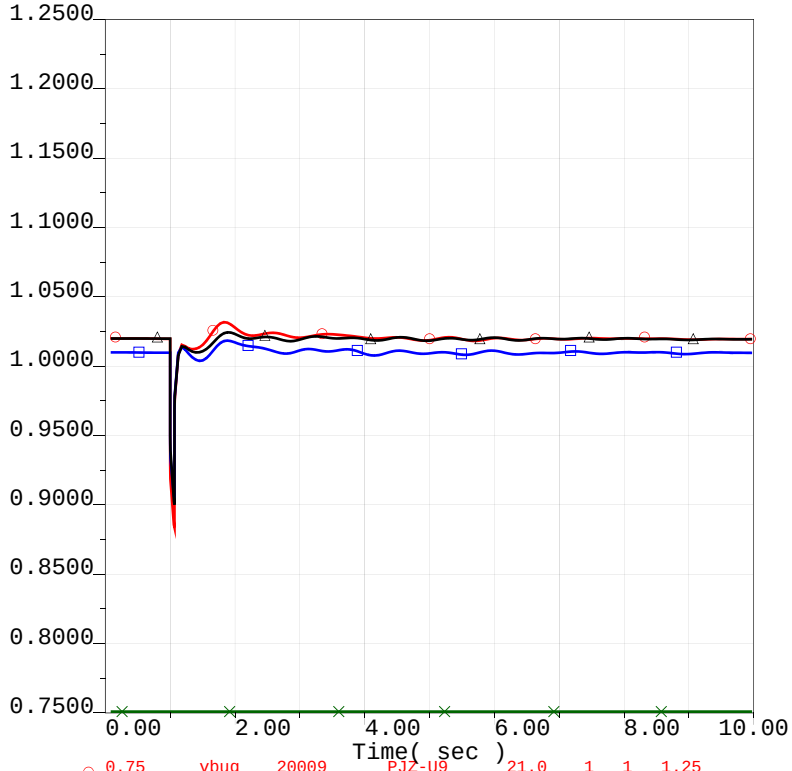
IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 3

CFE Busses Page 1

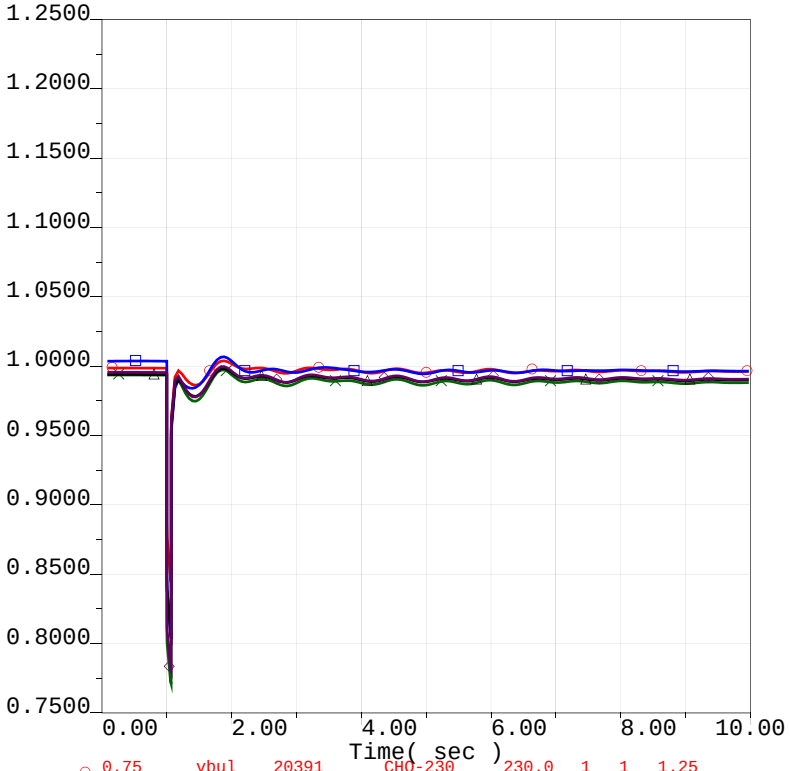


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 3

la_nsfc_alt2 | Wed Jun 08 11:10:17 2005

CFE Busses Page 2

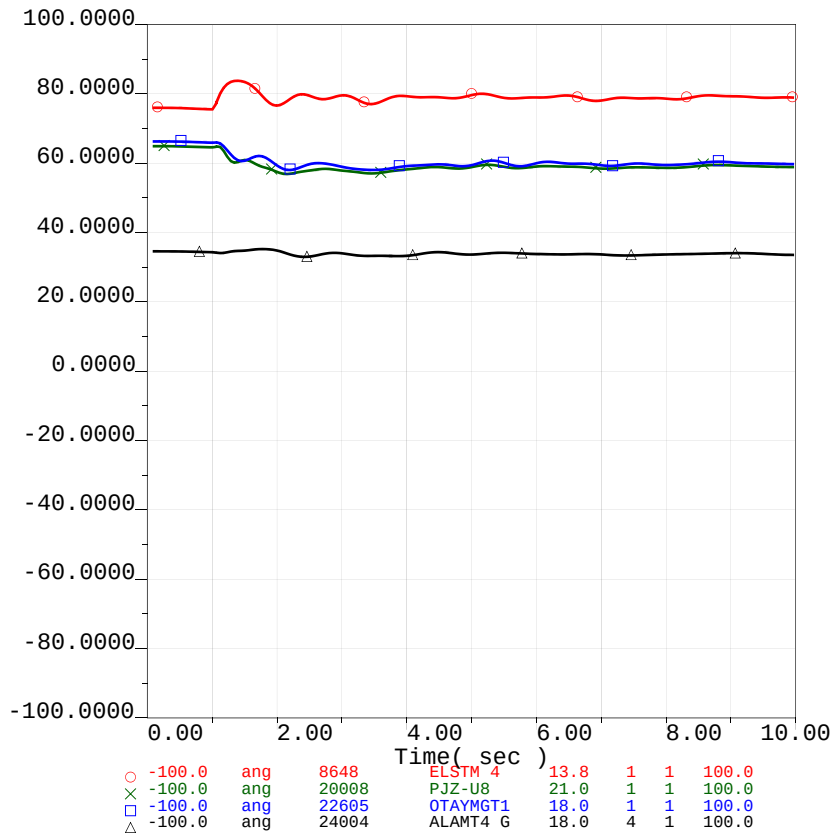


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 3

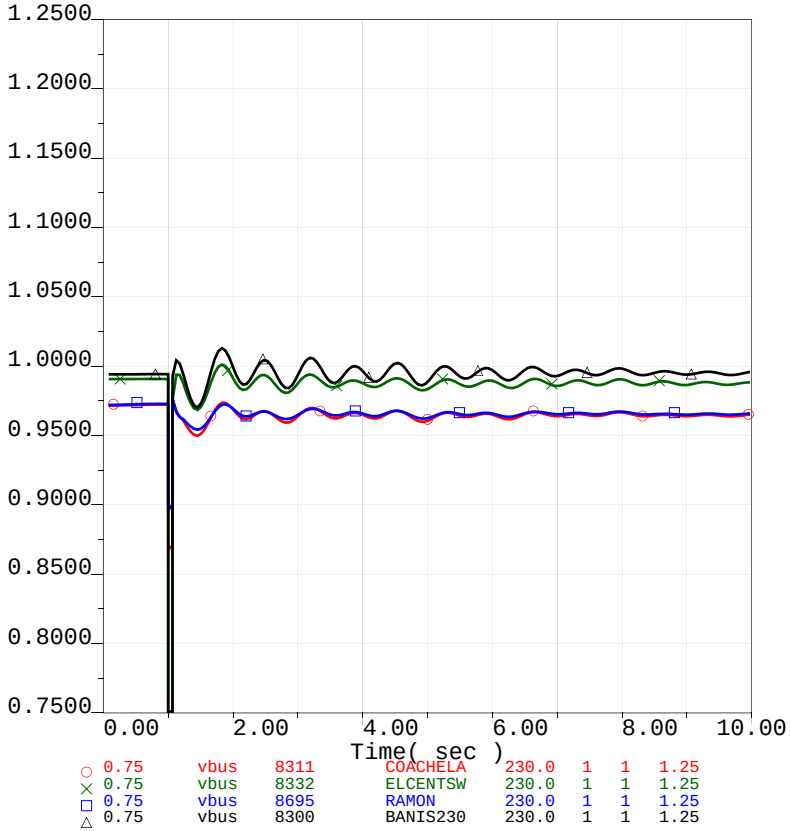
la_nsfc_alt2 | Wed Jun 08 11:10:17 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2 DISPATCH 3

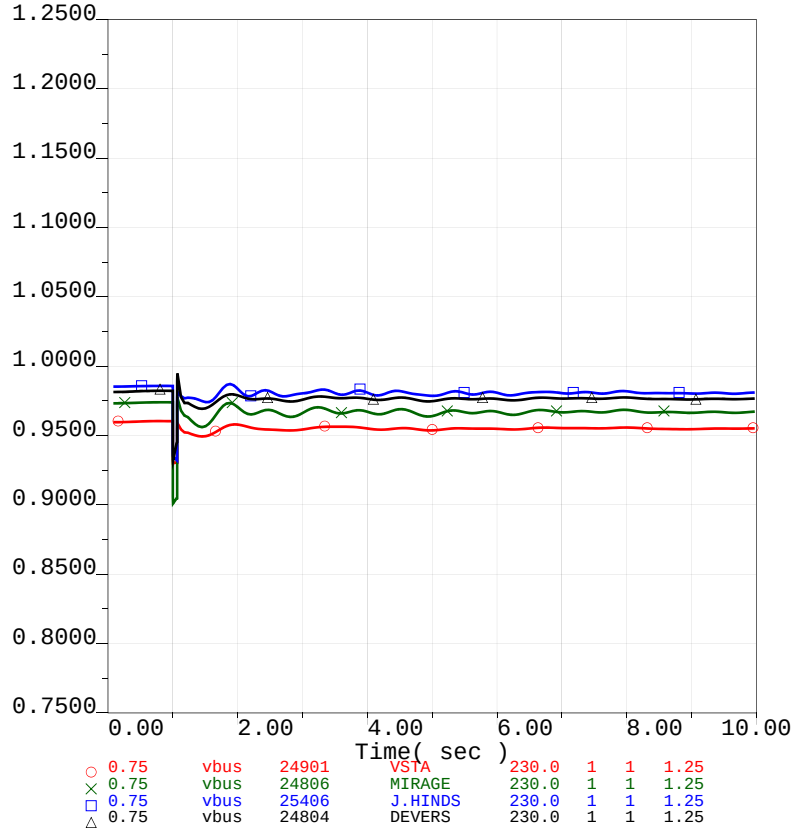
IID Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2a DISPATCH 3

la_nsfc_alt2a | Wed Jun 08 11:11:14 2005

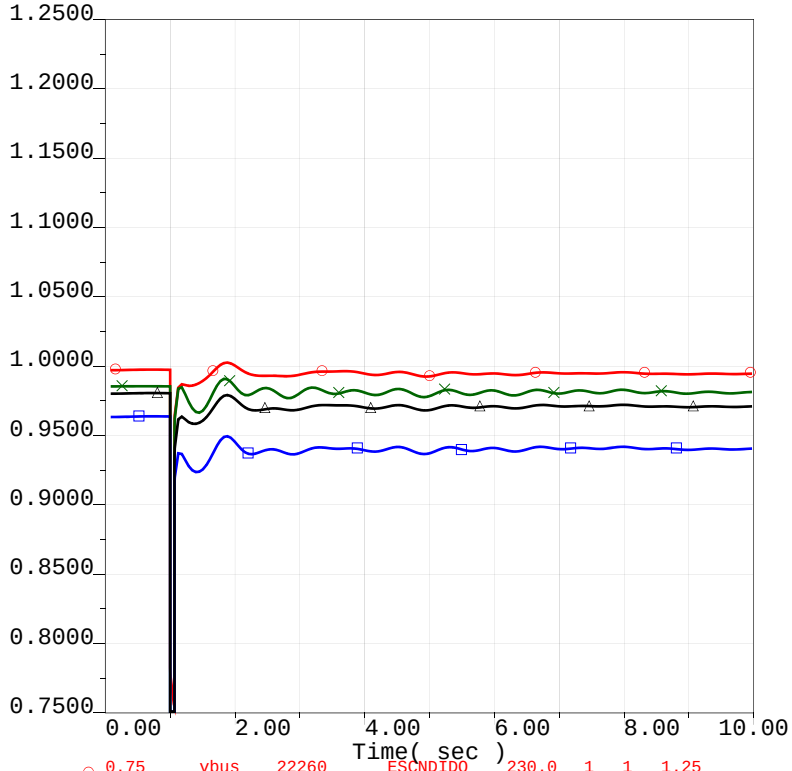
SCE Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2a DISPATCH 3

la_nsfc_alt2a | Wed Jun 08 11:11:15 2005

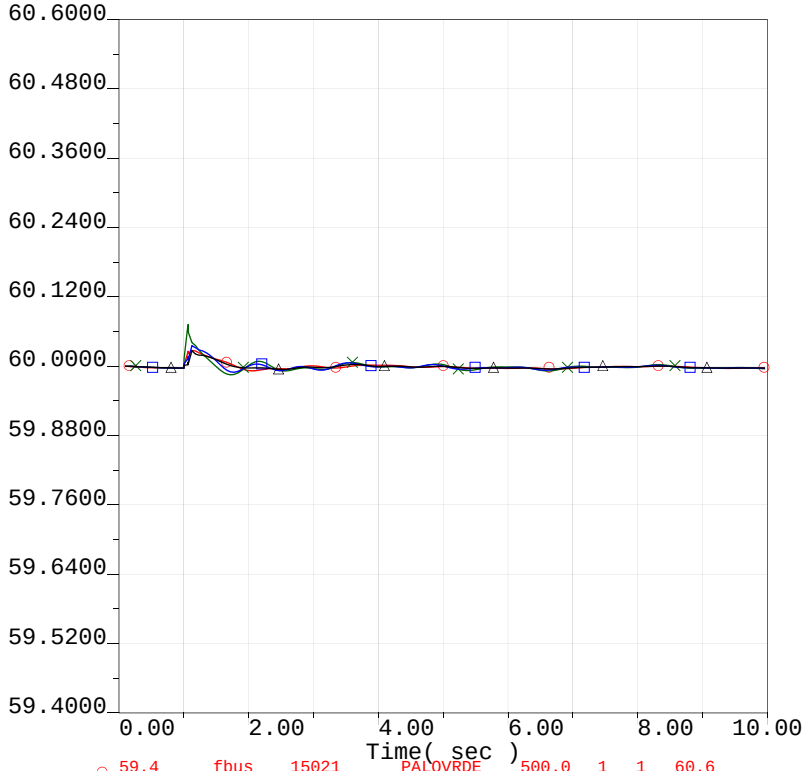
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2a DISPATCH 3

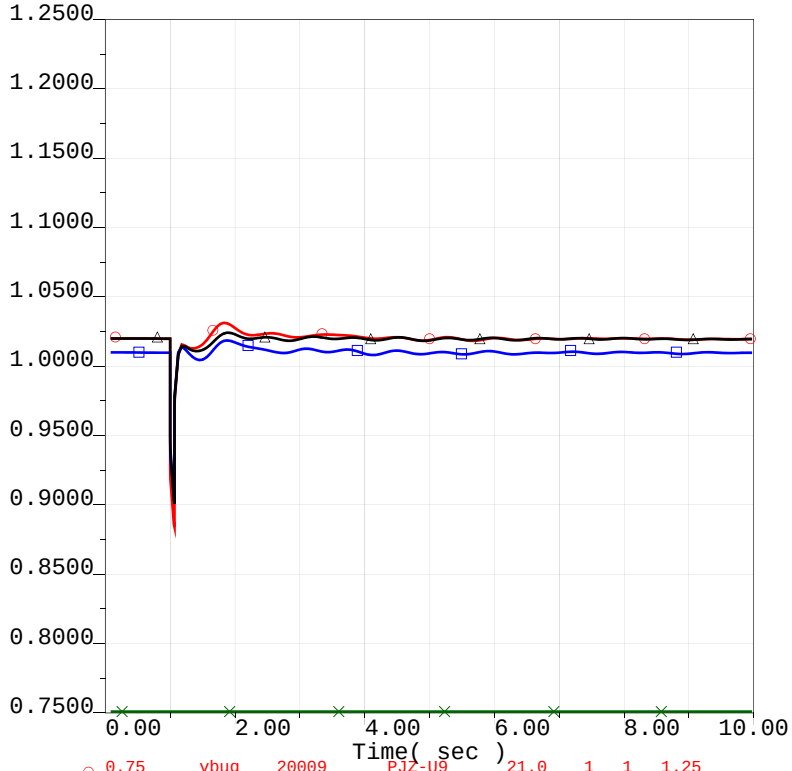
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2a DISPATCH 3

CFE Busses Page 1

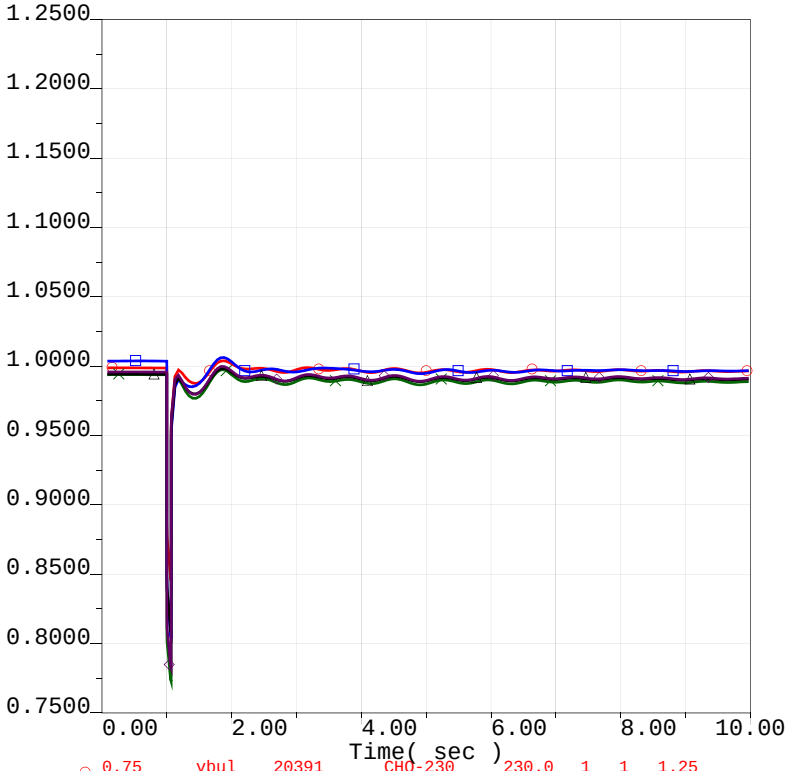


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2a DISPATCH 3

la_nsfc_alt2a | Wed Jun 08 11:11:17 2005

CFE Busses Page 2

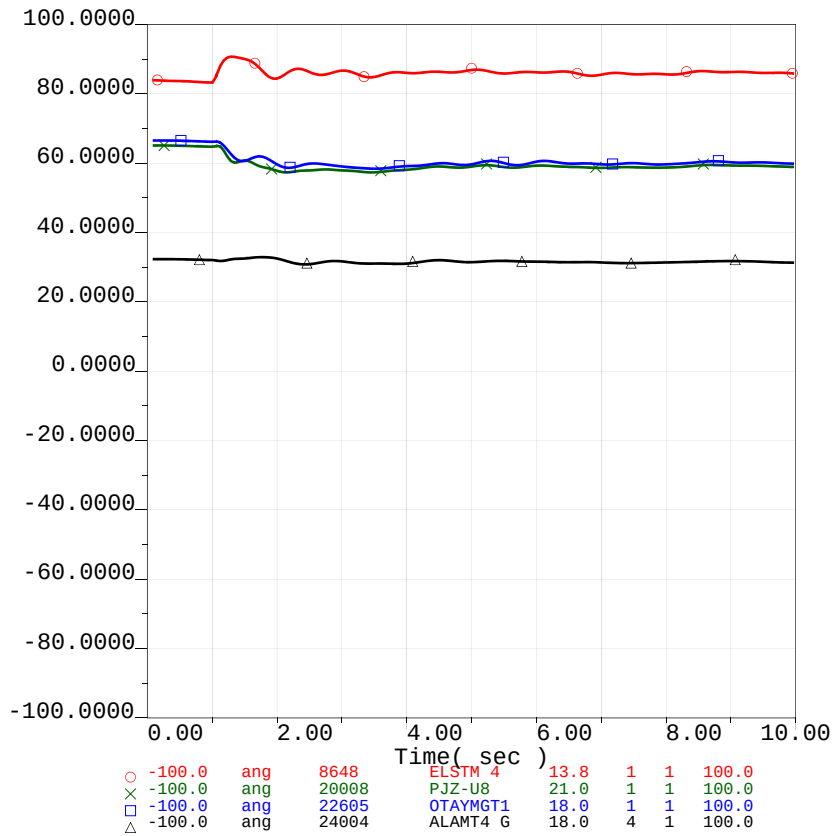


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2a DISPATCH 3

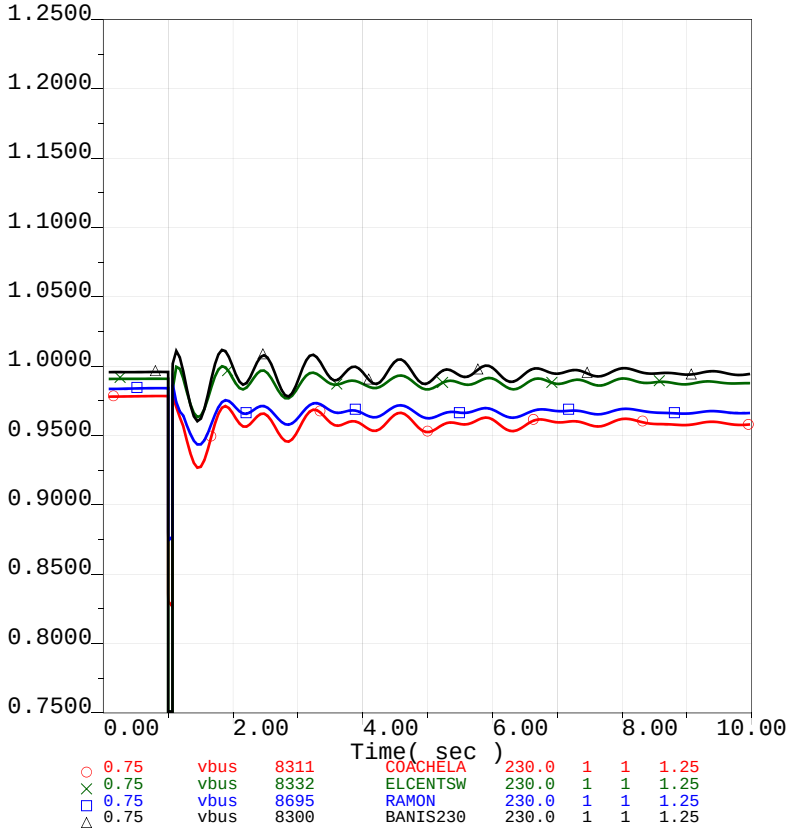
la_nsfc_alt2a | Wed Jun 08 11:11:18 2005

Rotor Angles for Gen Busses



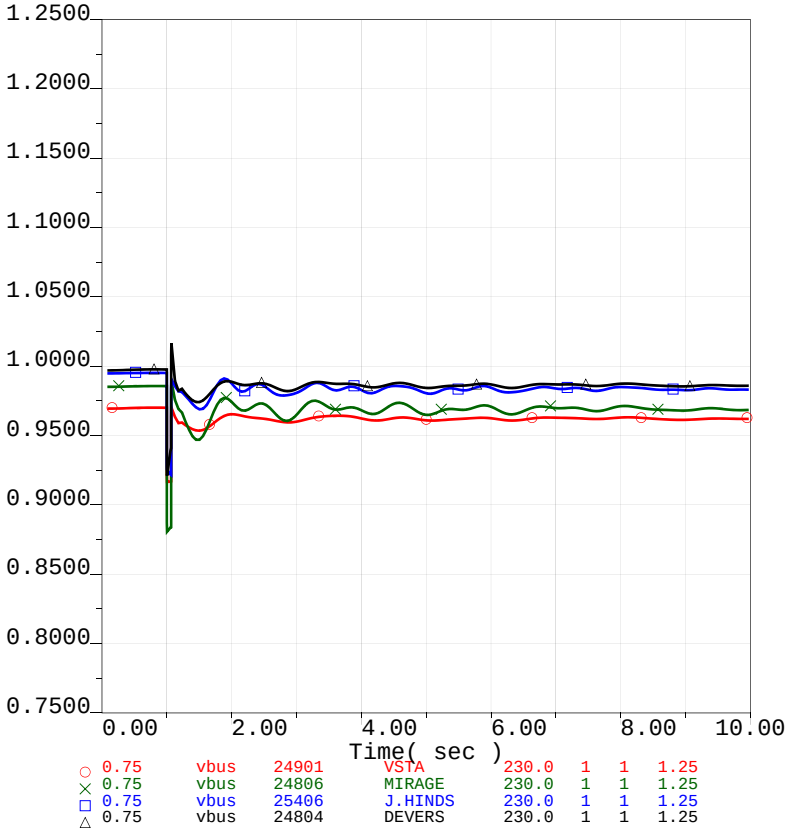
IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - CENTRAL 500 kV
Case ALT 2a DISPATCH 3

IID Busses



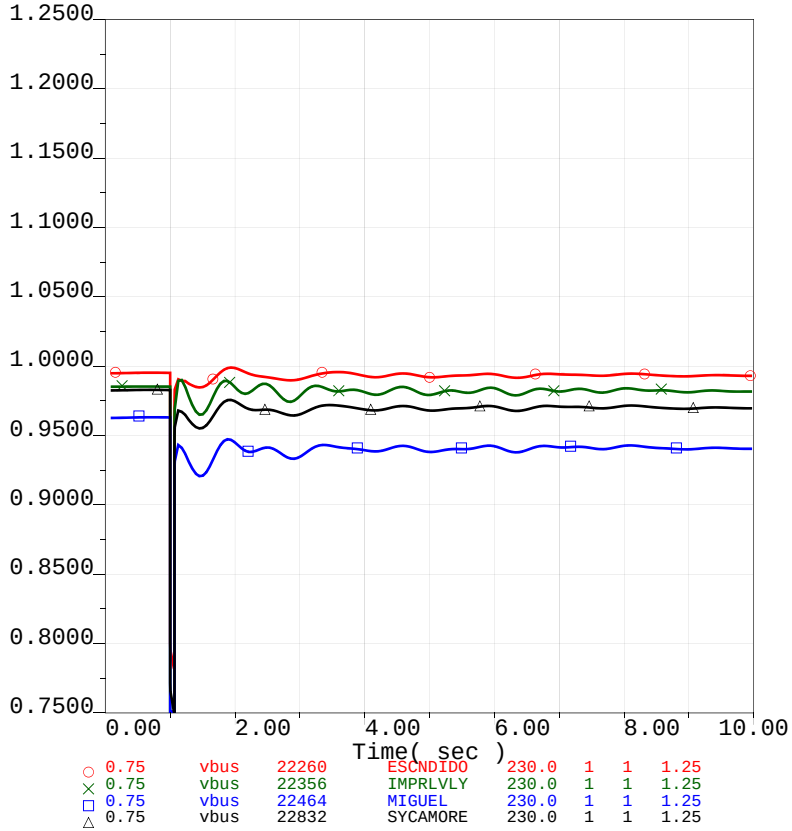
IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 3

SCE Busses



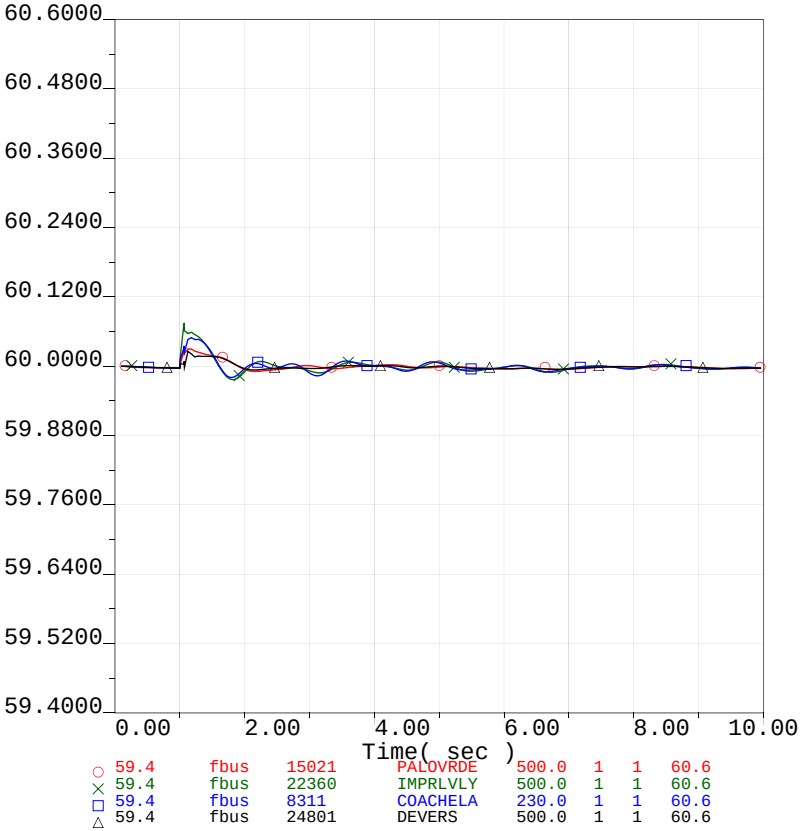
IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 3

SDGE Busses



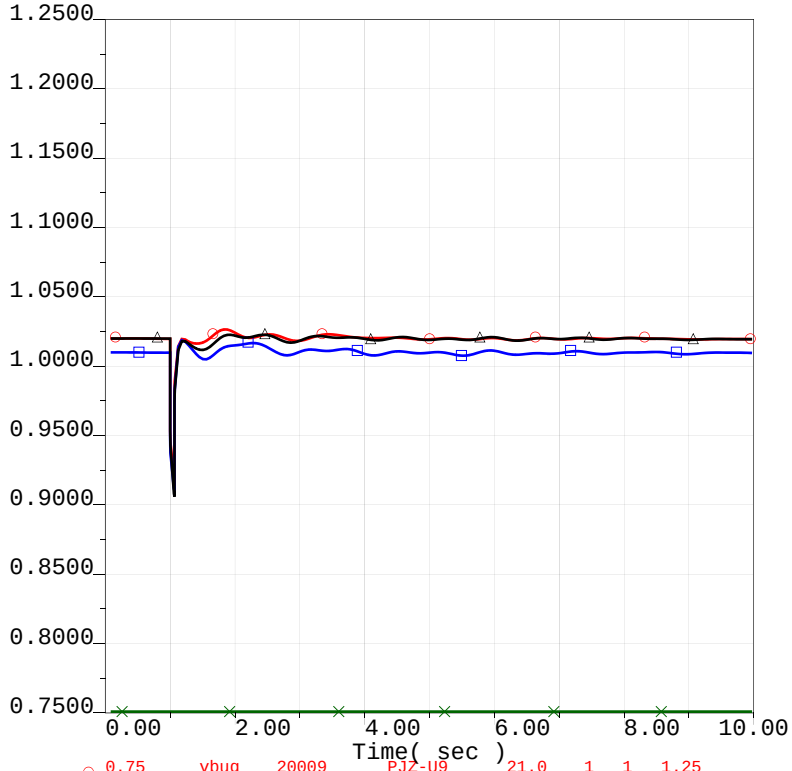
IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 3

CFE Busses Page 1

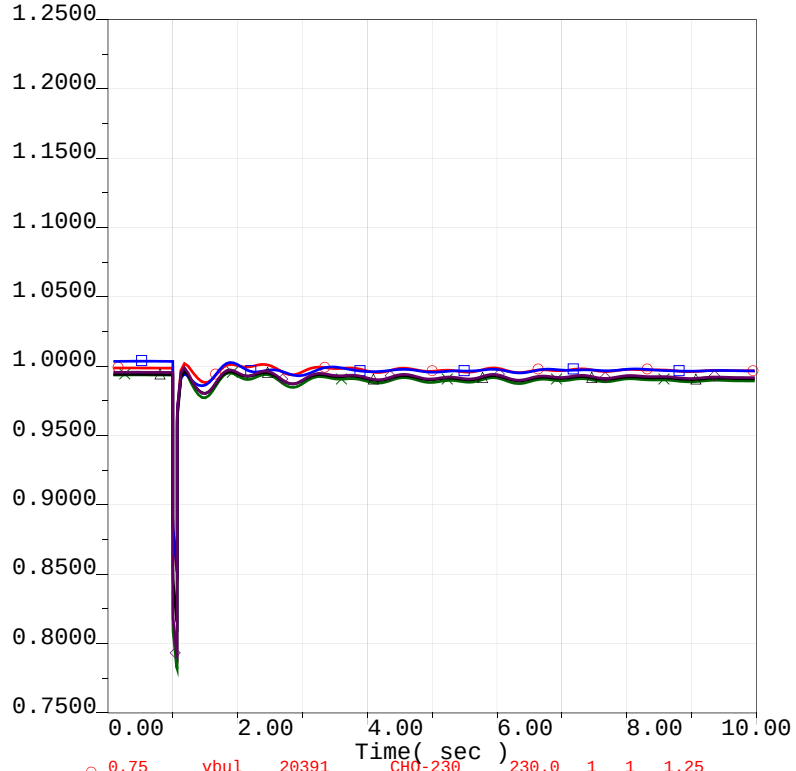


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 3

la_nsfn_alt3b | Wed Jun 08 11:16:18 2005

CFE Busses Page 2

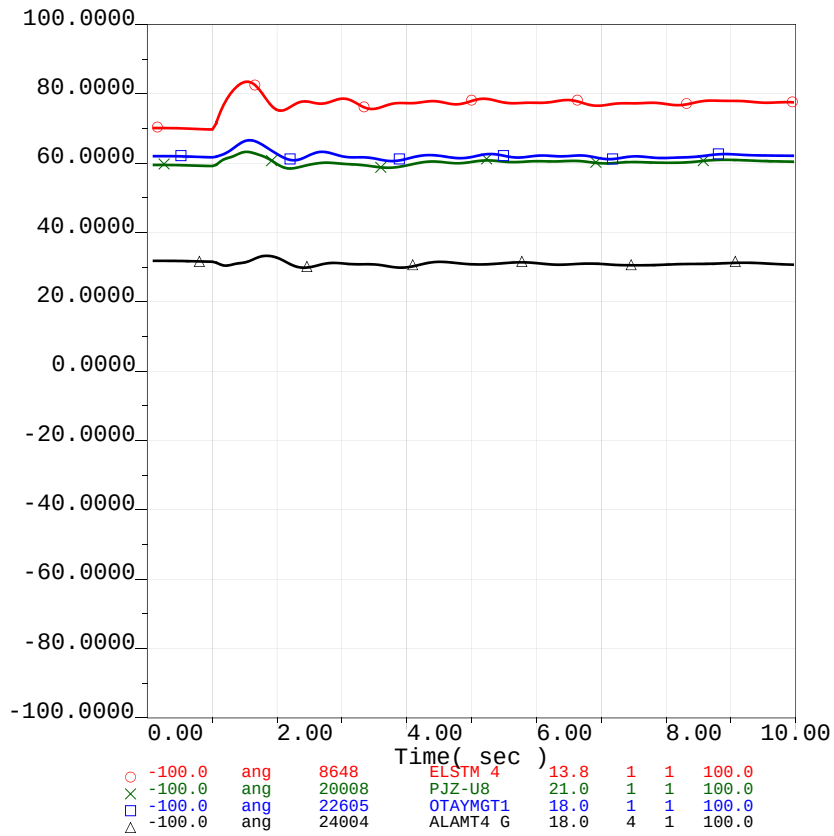


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 3

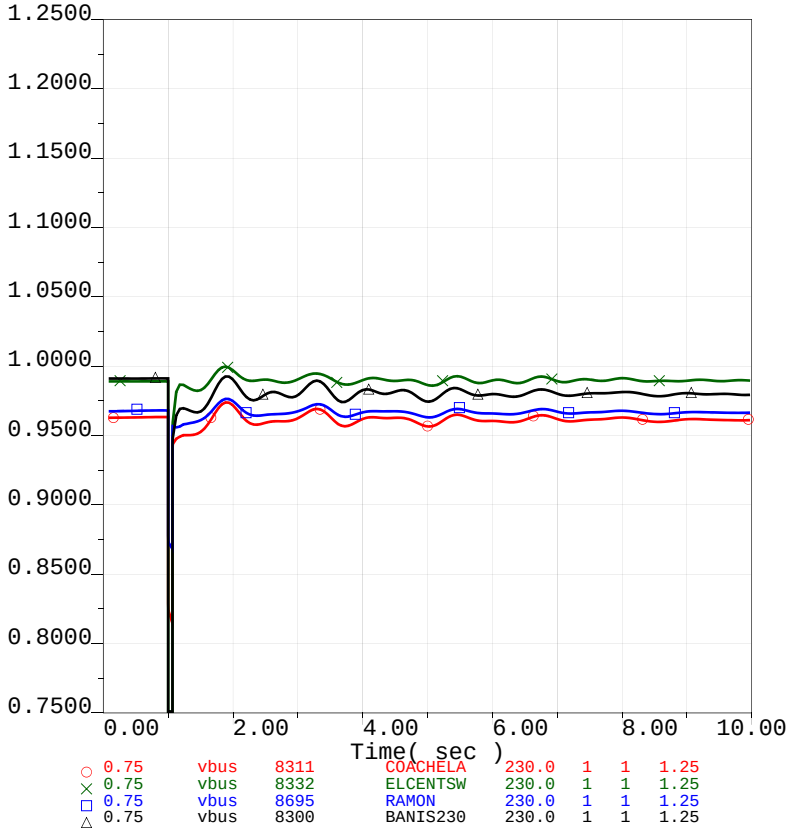
la_nsfn_alt3b | Wed Jun 08 11:16:19 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - NORTHSD 500 kV
Case ALT 3B DISPATCH 3

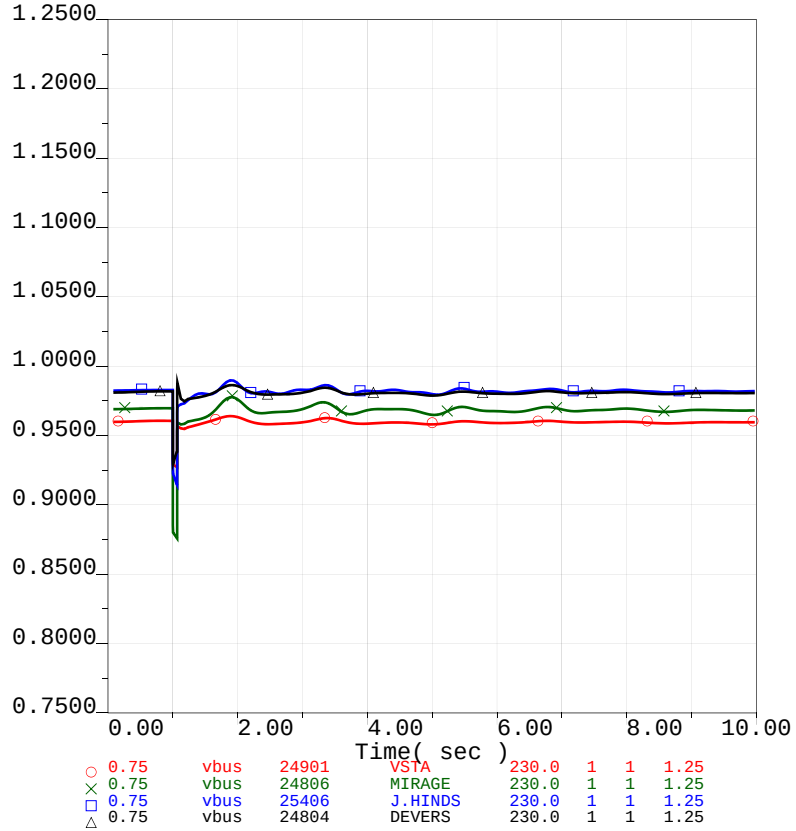
IID Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 2 DISPATCH 3

la_nsfi_alt2 | Wed Jun 08 11:14:30 2005

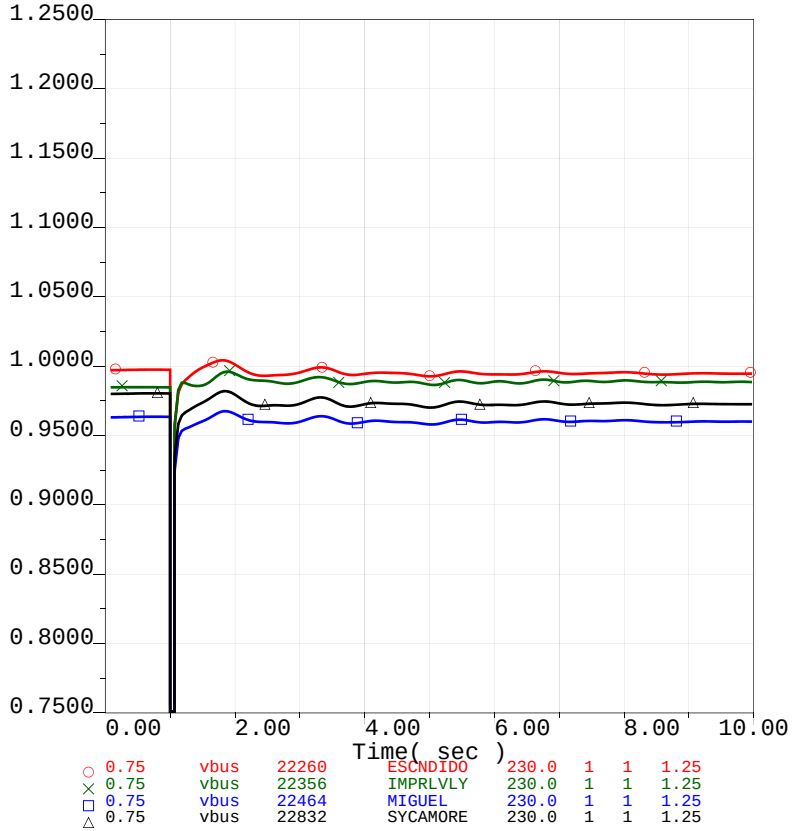
SCE Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 2 DISPATCH 3

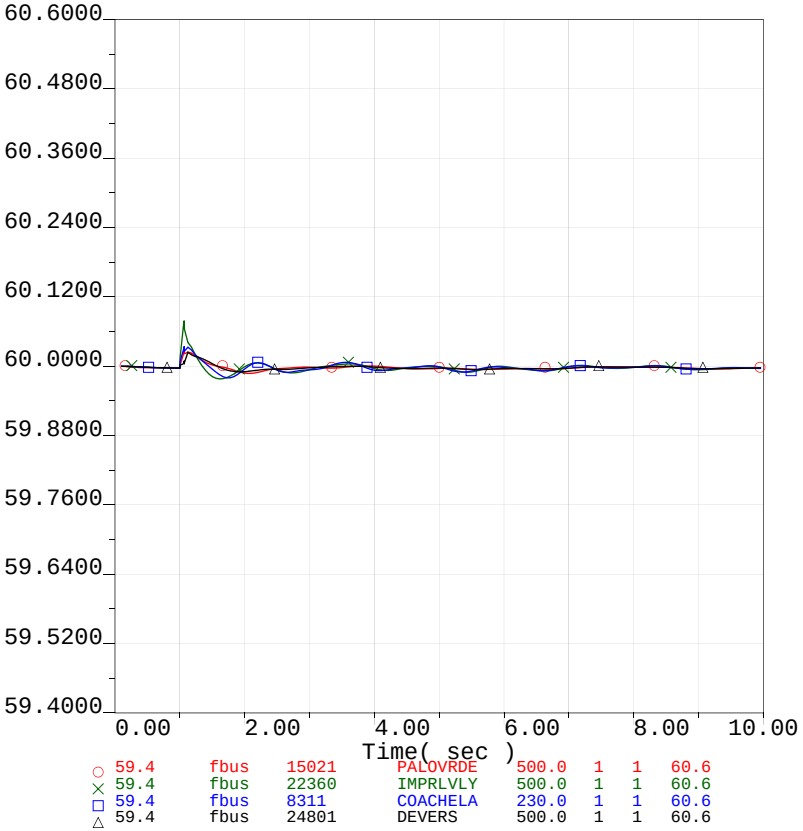
la_nsfi_alt2 | Wed Jun 08 11:14:31 2005

SDGE Busses



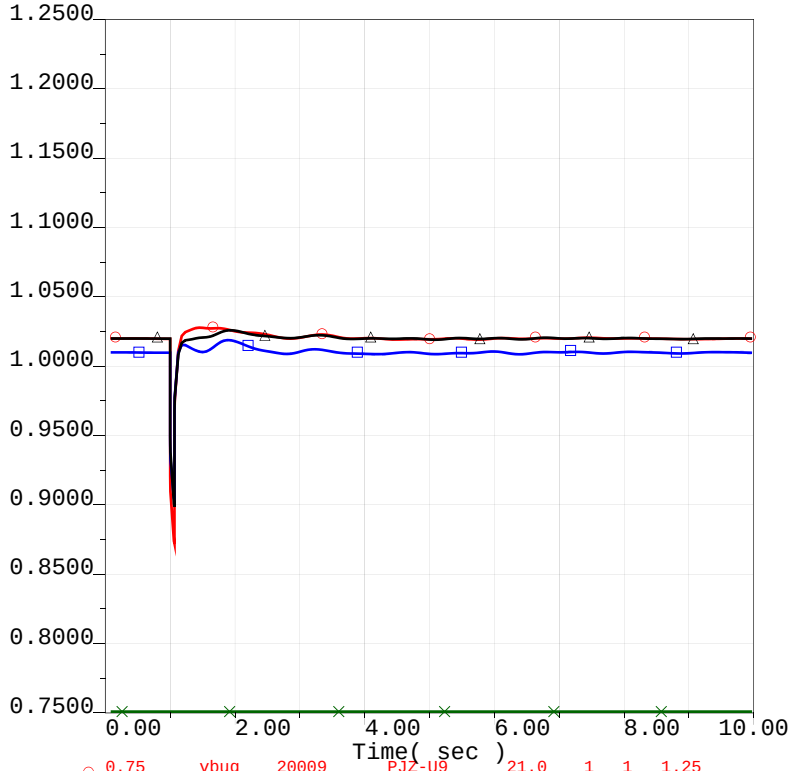
IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 2 DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 2 DISPATCH 3

CFE Busses Page 1

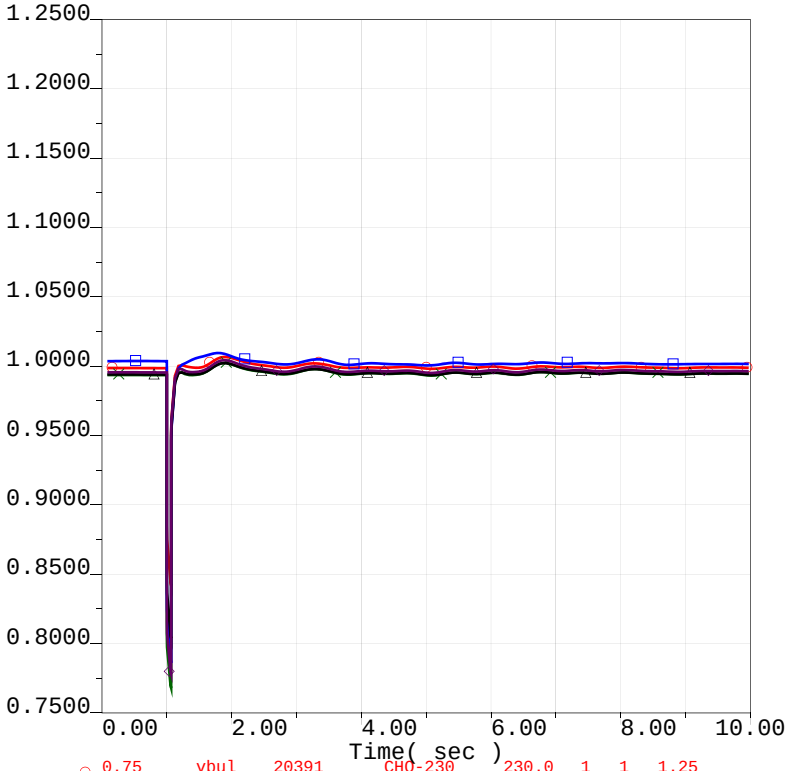


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 2 DISPATCH 3

la_nsfi_alt2 | Wed Jun 08 11:14:33 2005

CFE Busses Page 2

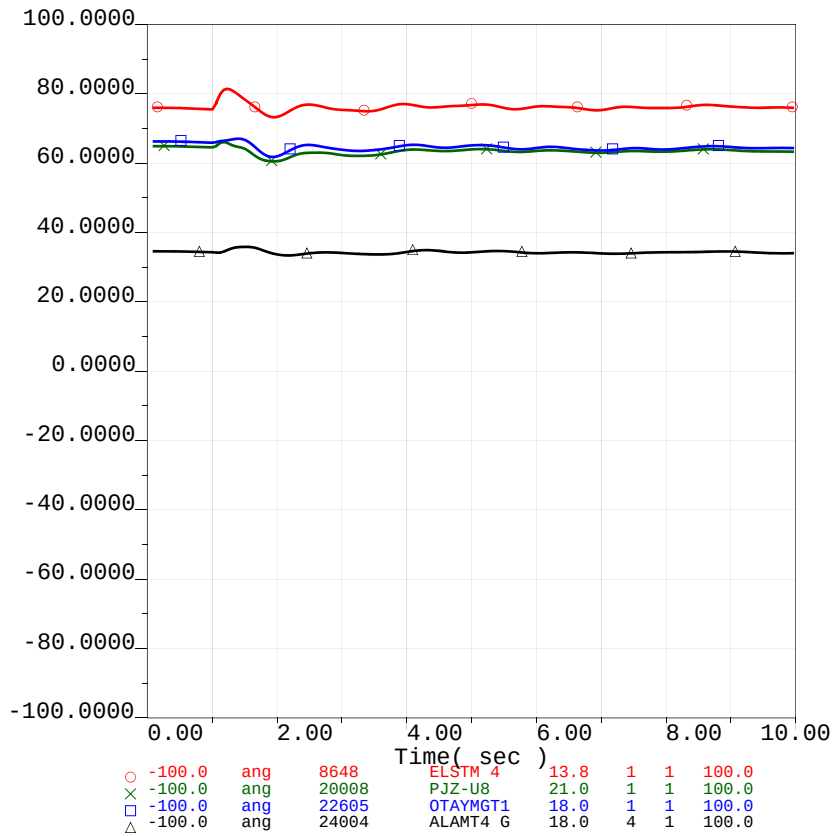


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 2 DISPATCH 3

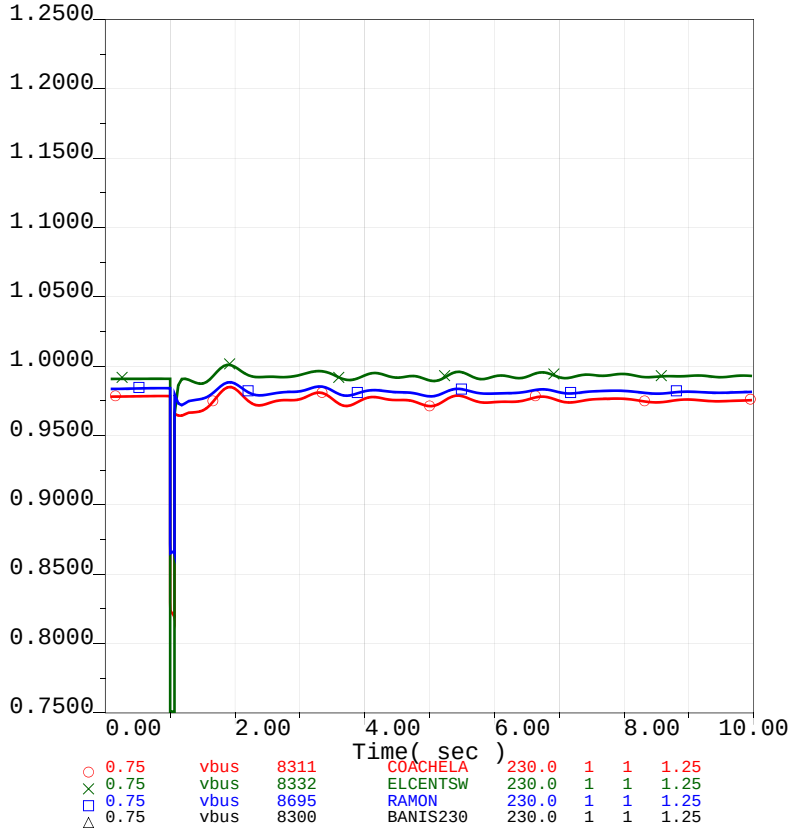
la_nsfi_alt2 | Wed Jun 08 11:14:34 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 2 DISPATCH 3

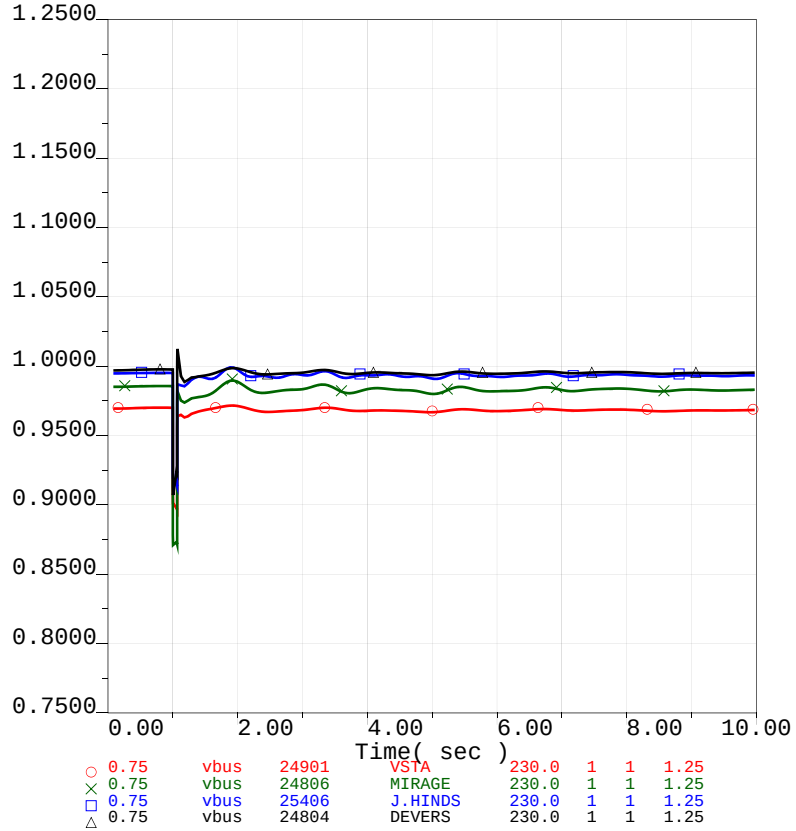
IID Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 3B DISPATCH 3

la_nsfi_alt3b | Wed Jun 08 11:15:25 2005

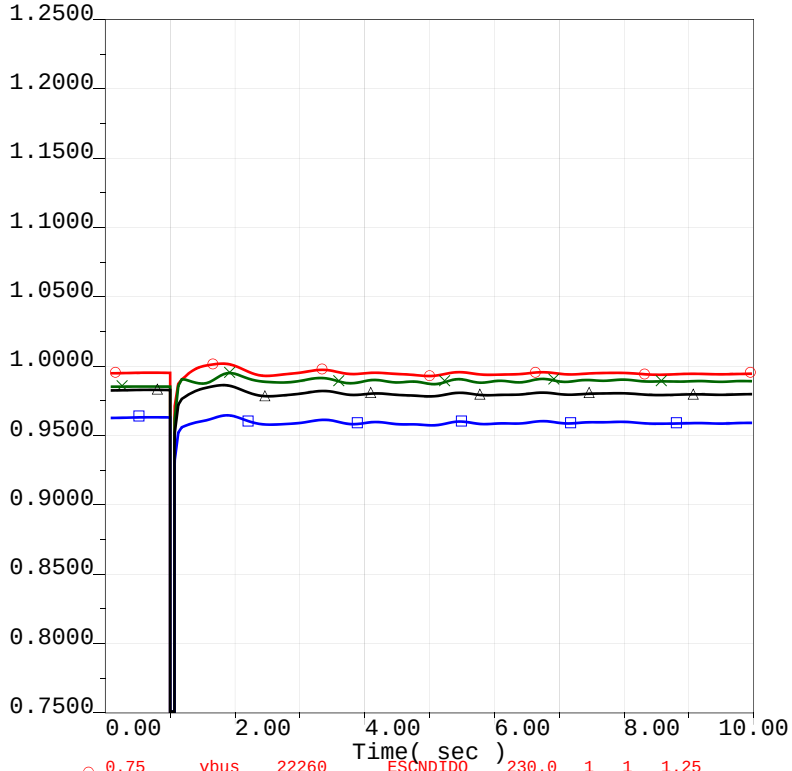
SCE Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 3B DISPATCH 3

la_nsfi_alt3b | Wed Jun 08 11:15:26 2005

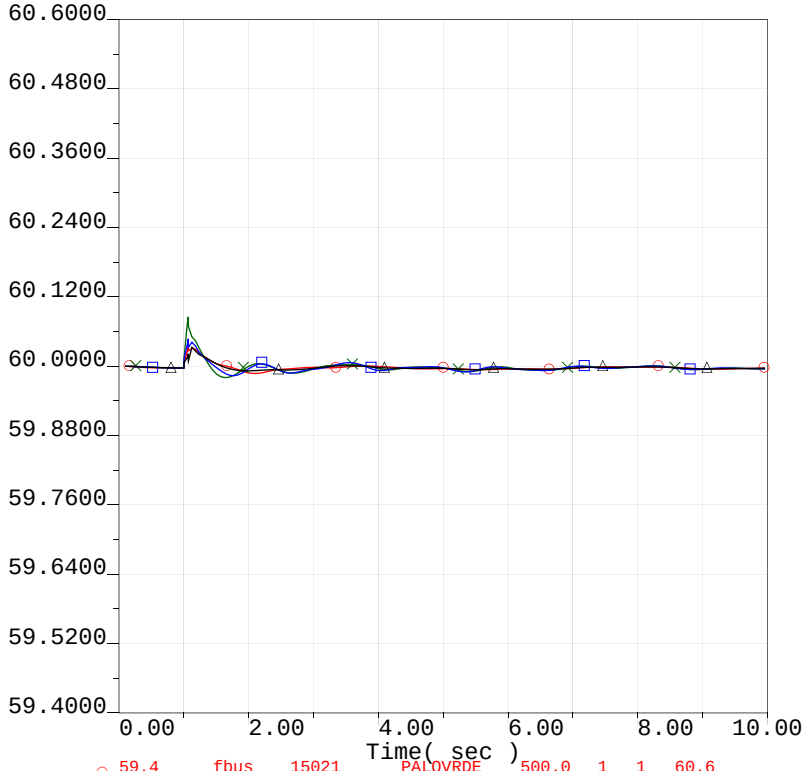
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 3B DISPATCH 3

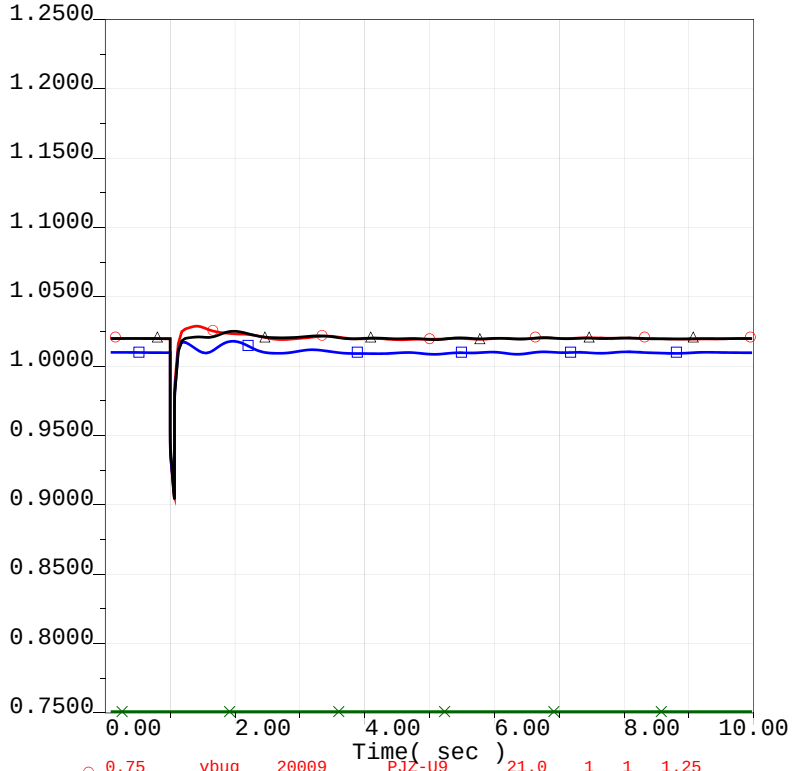
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 3B DISPATCH 3

CFE Busses Page 1

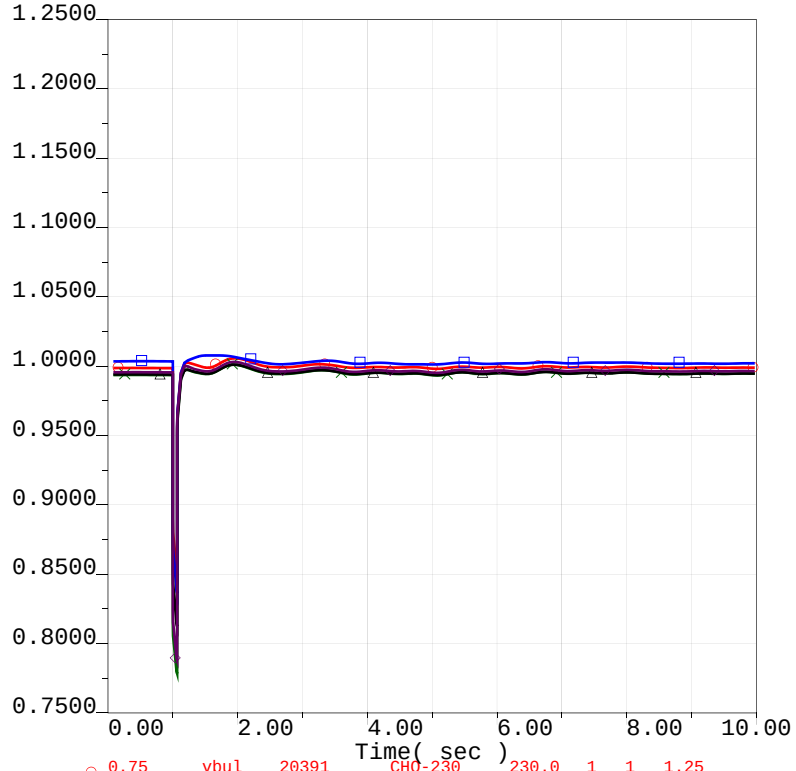


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 3B DISPATCH 3

la_nsfi_alt3b | Wed Jun 08 11:15:28 2005

CFE Busses Page 2

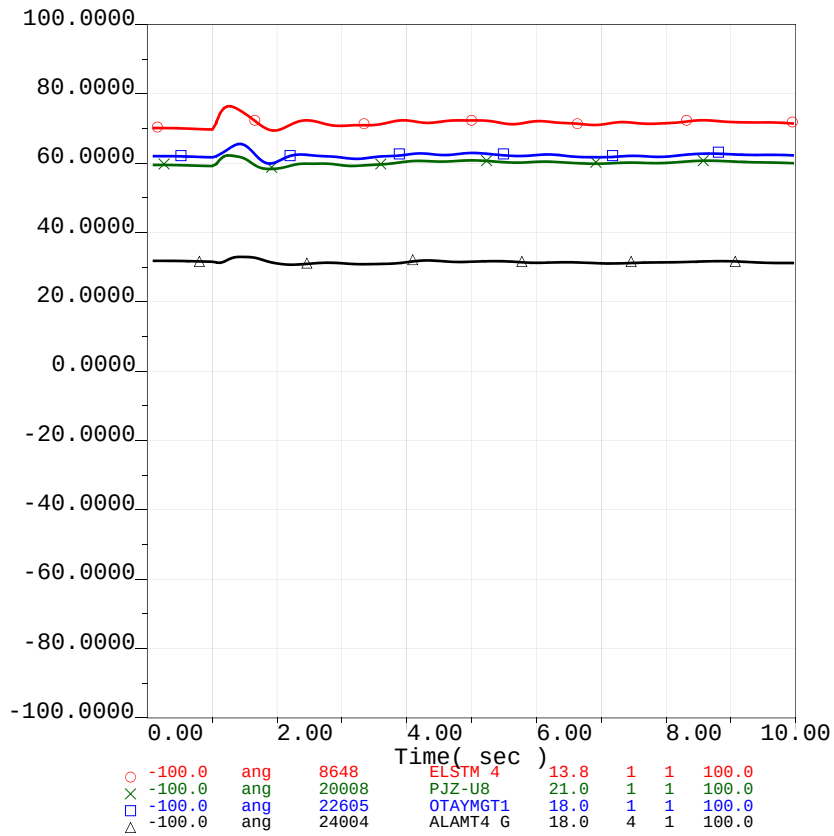


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 3B DISPATCH 3

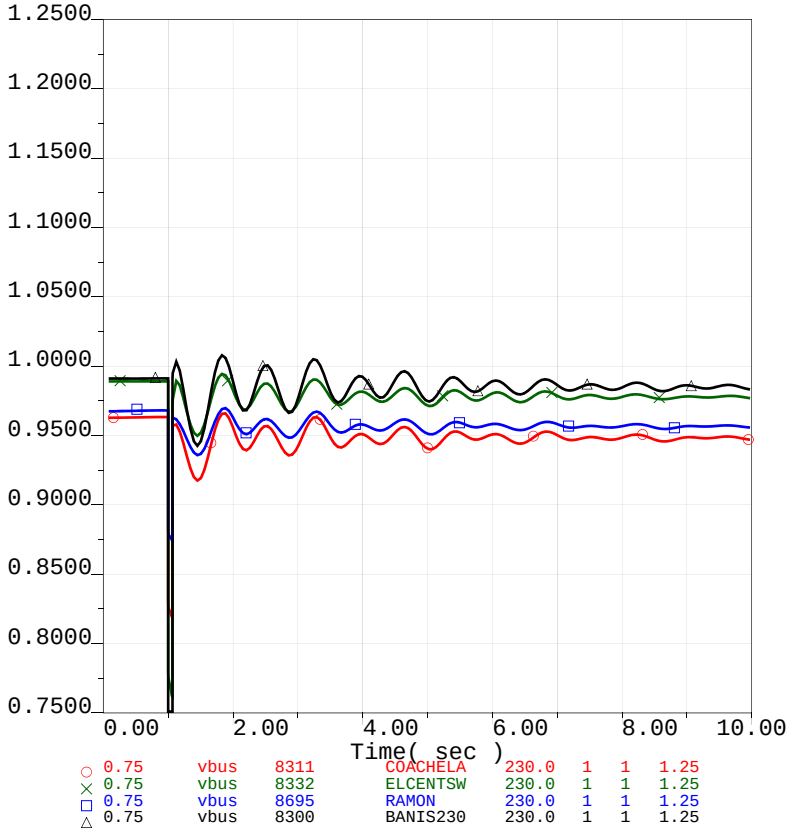
la_nsfi_alt3b | Wed Jun 08 11:15:29 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
Case ALT 3B DISPATCH 3

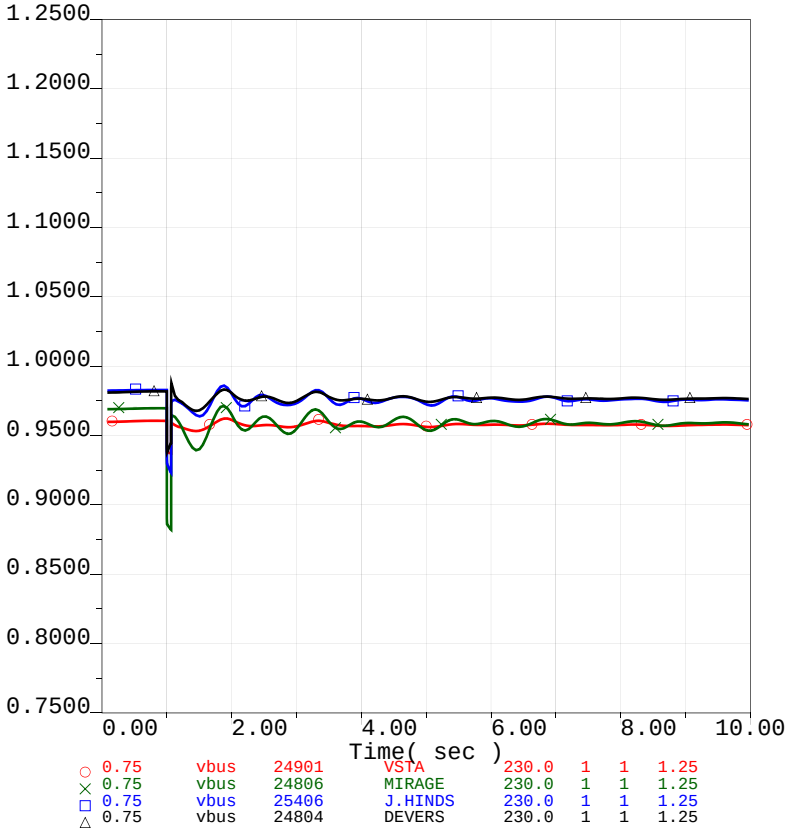
IID Busses



IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2 DISPATCH 3

la_nsfb_alt2 | Wed Jun 08 11:03:29 2005

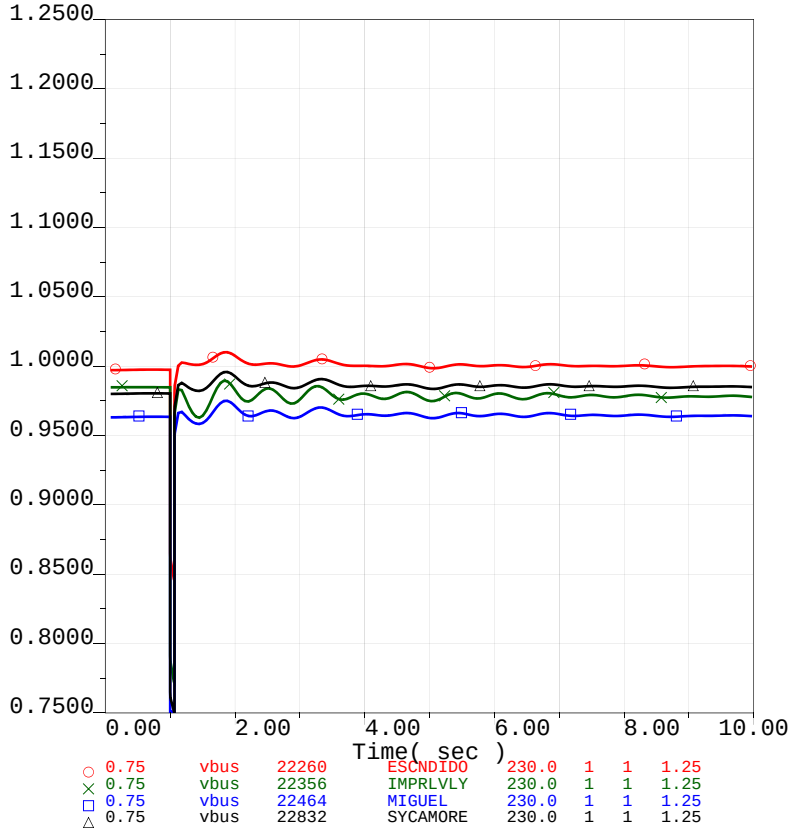
SCE Busses



IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2 DISPATCH 3

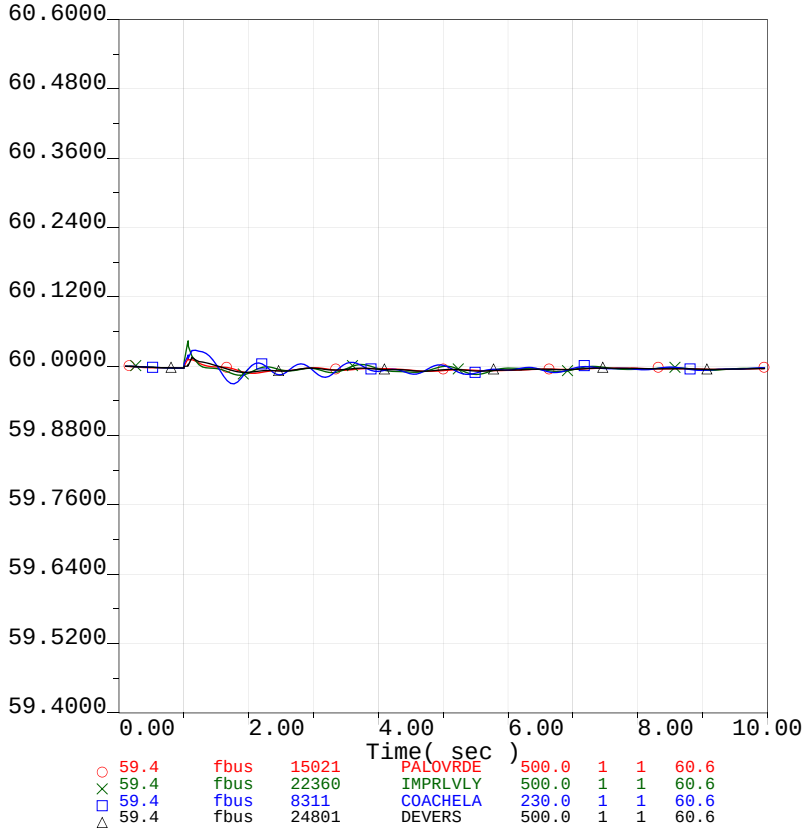
la_nsfb_alt2 | Wed Jun 08 11:03:30 2005

SDGE Busses



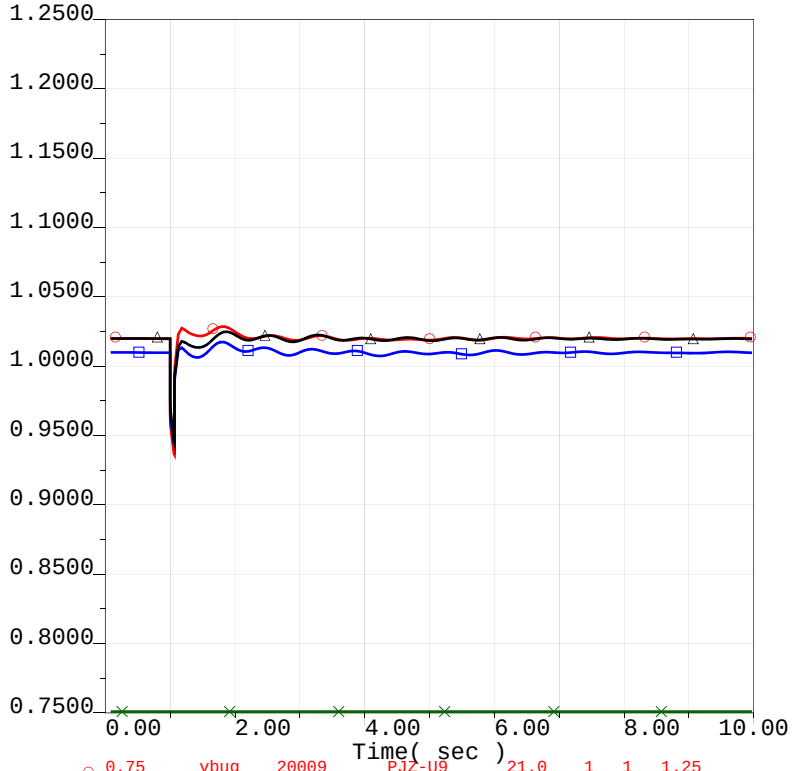
IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2 DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2 DISPATCH 3

CFE Busses Page 1

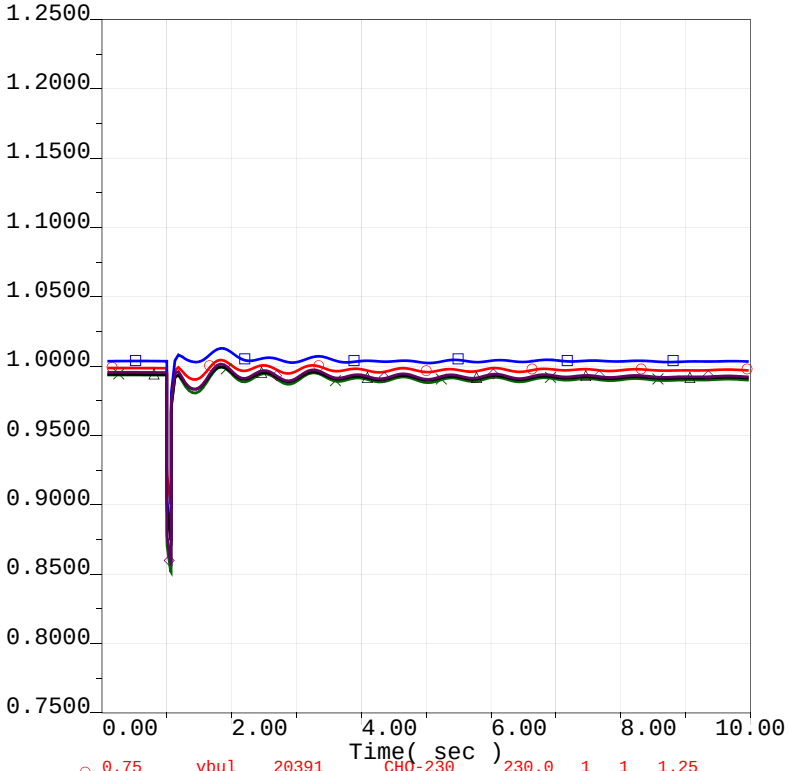


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2 DISPATCH 3

la_nsfb_alt2 | Wed Jun 08 11:03:32 2005

CFE Busses Page 2

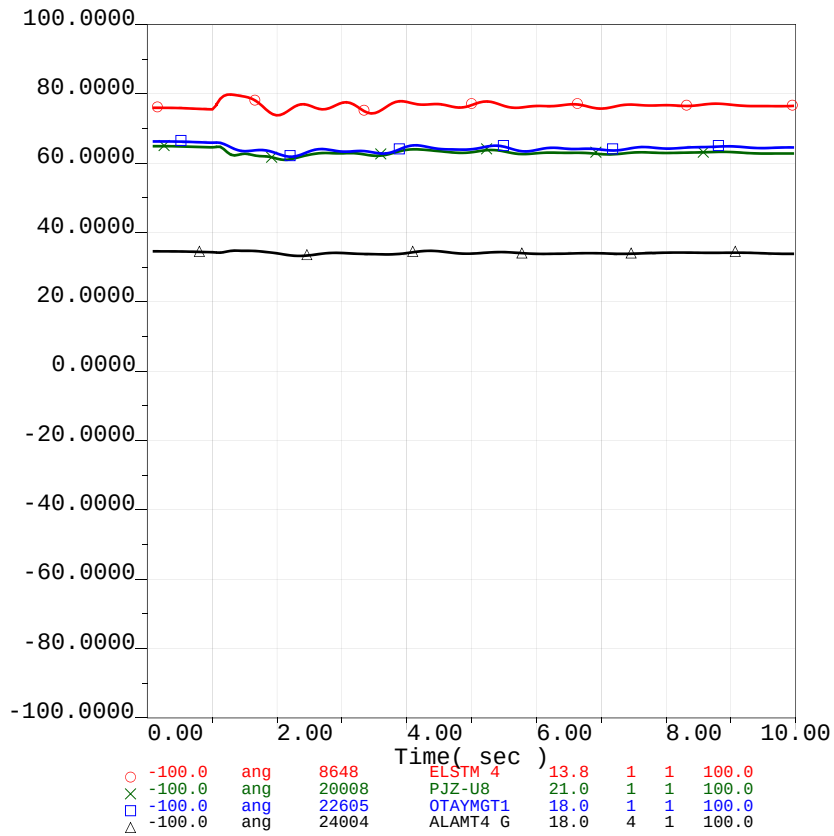


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2 DISPATCH 3

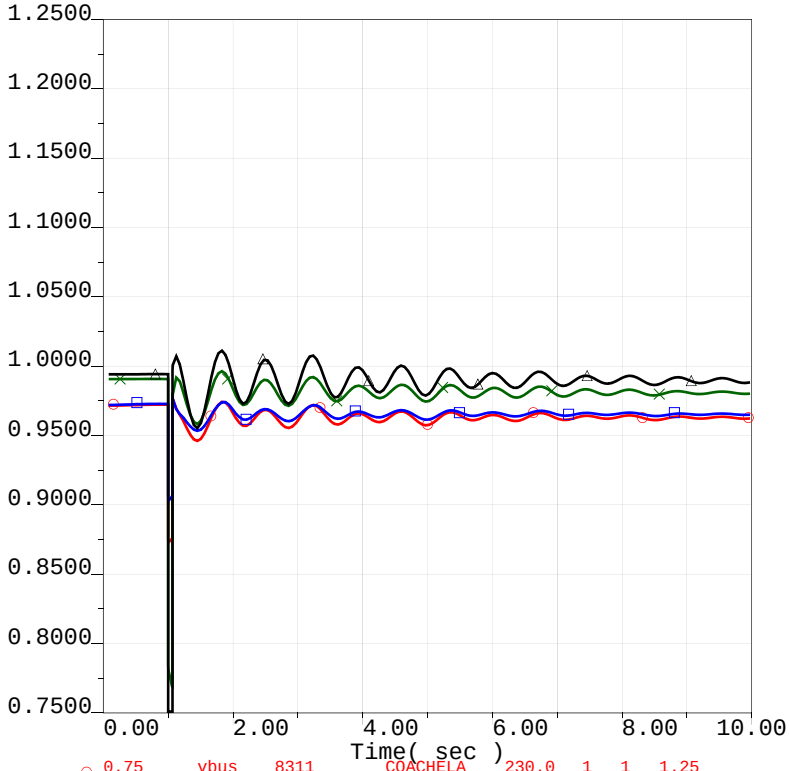
la_nsfb_alt2 | Wed Jun 08 11:03:33 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2 DISPATCH 3

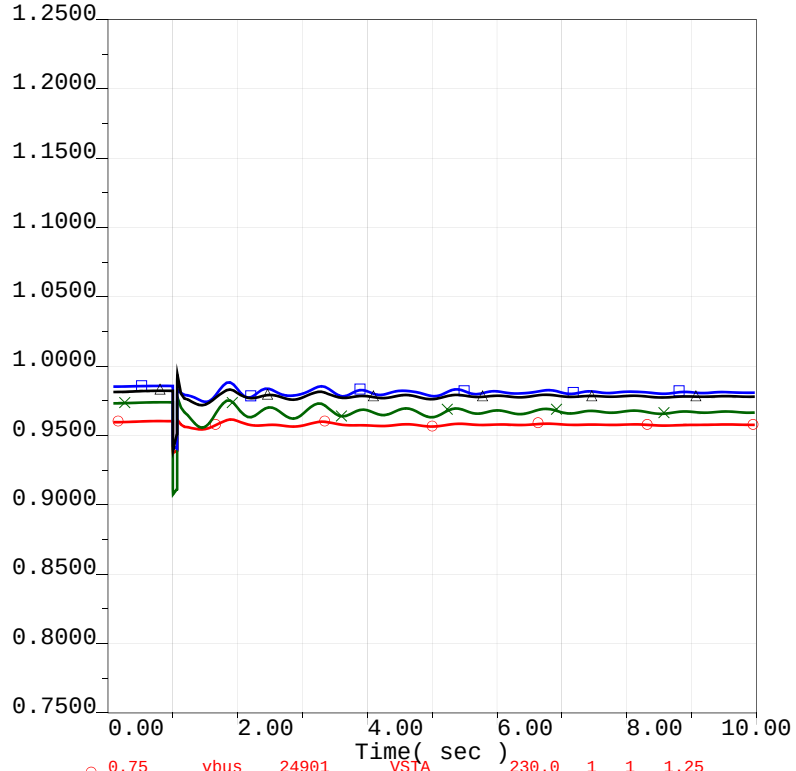
IID Busses



○ 0.75	vbus	8311	COACHELA	230.0	1	1	1.25
× 0.75	vbus	8332	ELCENTSW	230.0	1	1	1.25
□ 0.75	vbus	8695	RAMON	230.0	1	1	1.25
△ 0.75	vbus	8300	BANIS230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2A DISPATCH 3

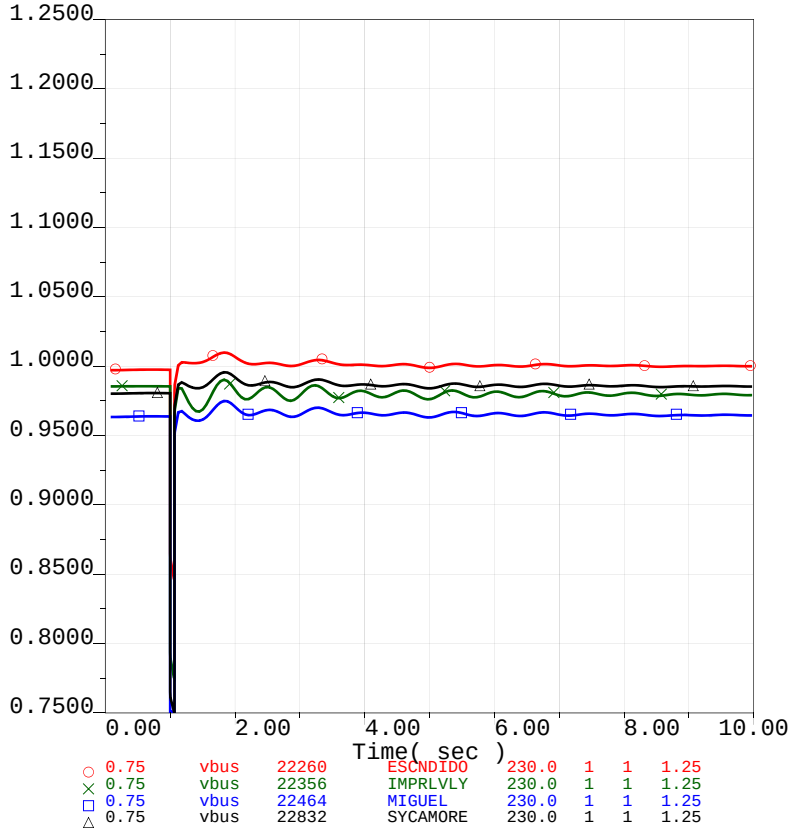
SCE Busses



○ 0.75	vbus	24901	VSTA	230.0	1	1	1.25
× 0.75	vbus	24806	MIRAGE	230.0	1	1	1.25
□ 0.75	vbus	25406	J.HINDS	230.0	1	1	1.25
△ 0.75	vbus	24804	DEVERS	230.0	1	1	1.25

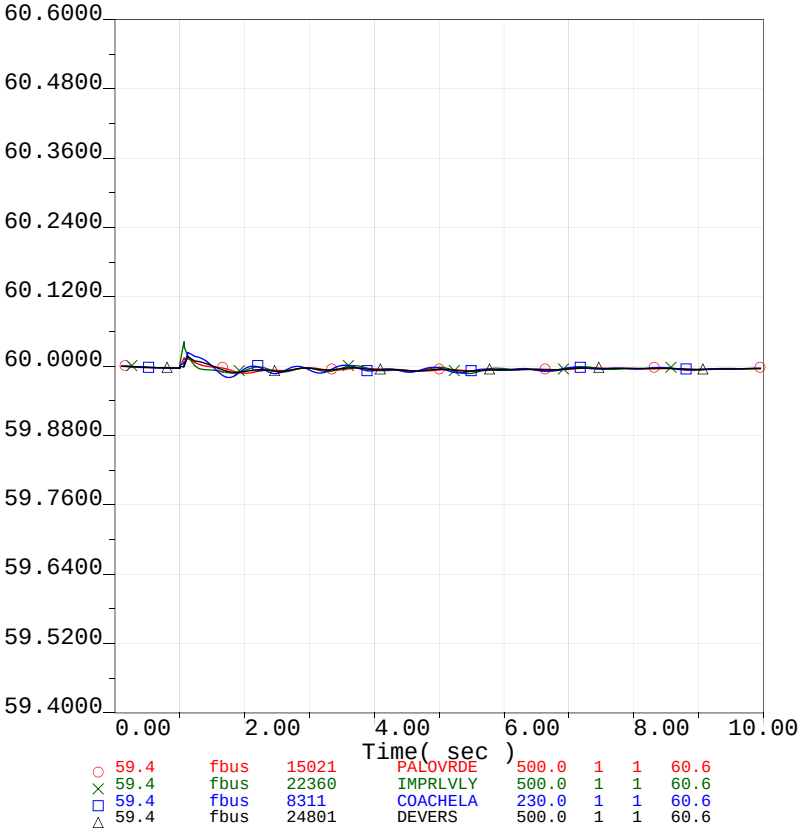
IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2A DISPATCH 3

SDGE Busses



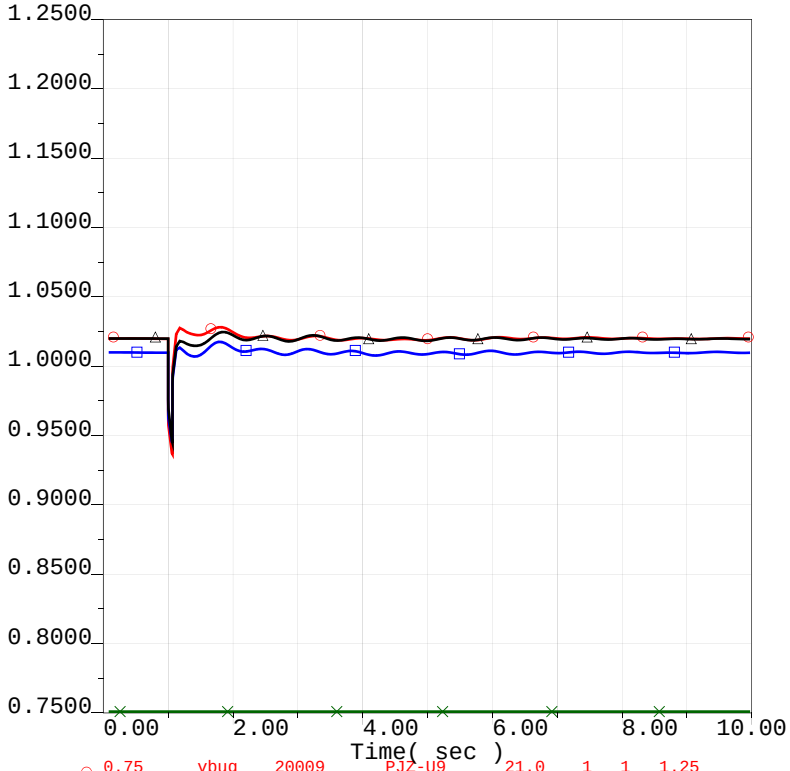
IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2A DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2A DISPATCH 3

CFE Busses Page 1

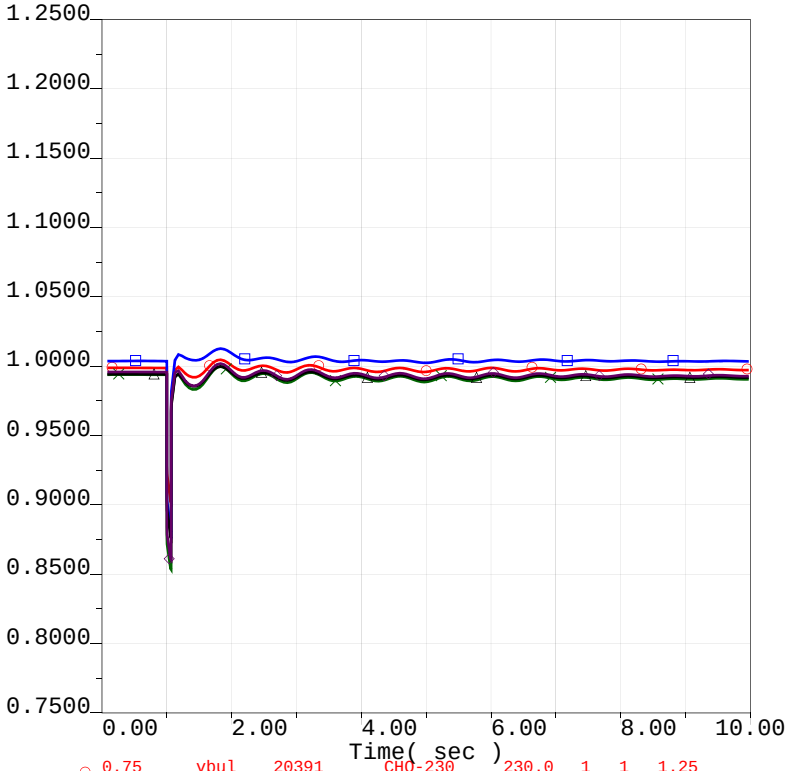


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2A DISPATCH 3

la_nsfb_alt2a | Wed Jun 08 11:04:26 2005

CFE Busses Page 2

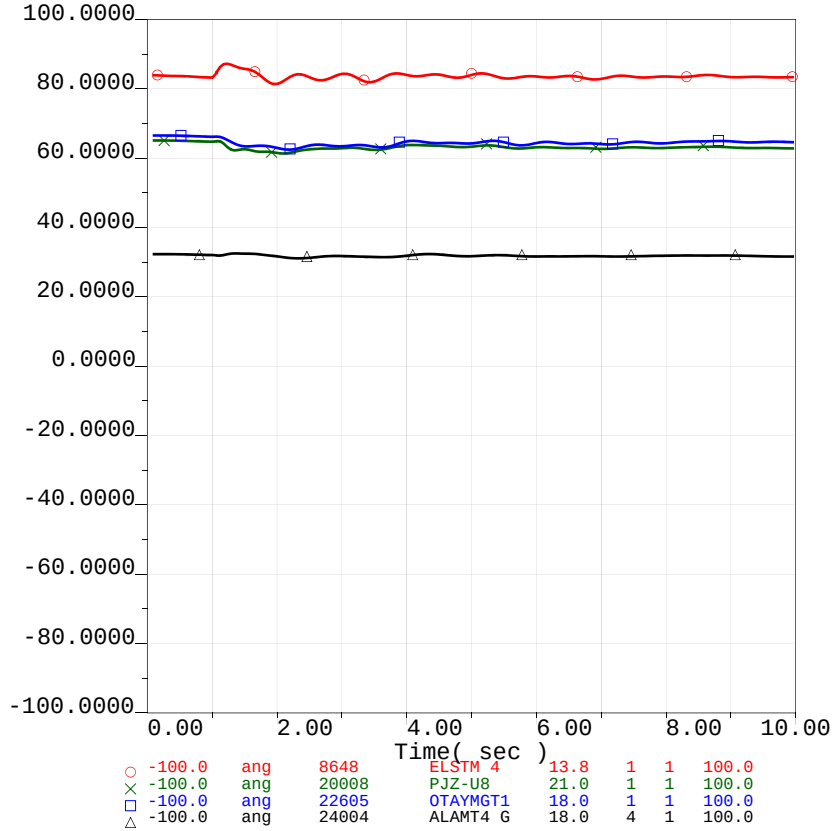


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2A DISPATCH 3

la_nsfb_alt2a | Wed Jun 08 11:04:27 2005

Rotor Angles for Gen Busses

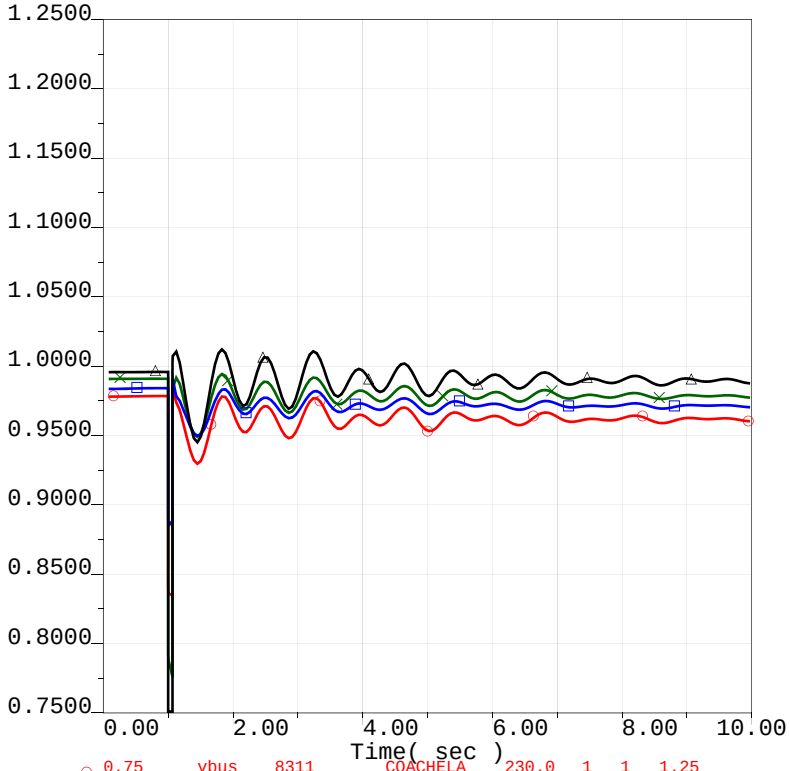


IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 2A DISPATCH 3

la_nsfb_alt2a

Wed Jun 08 11:04:28 2005

IID Busses

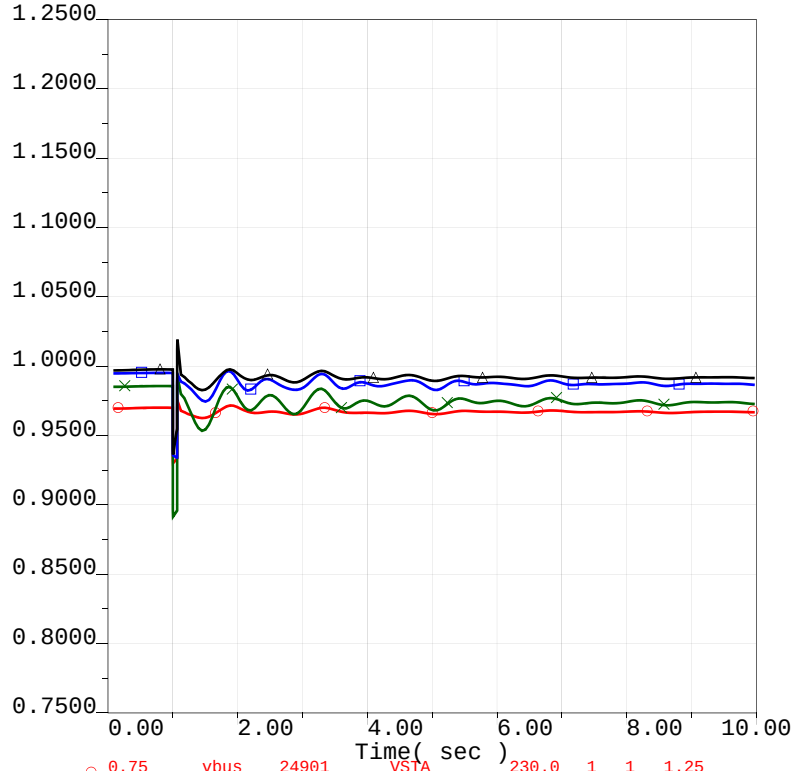


○ 0.75	vbus	8311	COACHELA	230.0	1	1	1.25
× 0.75	vbus	8332	ELCENTSW	230.0	1	1	1.25
□ 0.75	vbus	8695	RAMON	230.0	1	1	1.25
△ 0.75	vbus	8300	BANIS230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 3B DISPATCH 3

la_nsfb_alt3b | Wed Jun 08 11:05:29 2005

SCE Busses

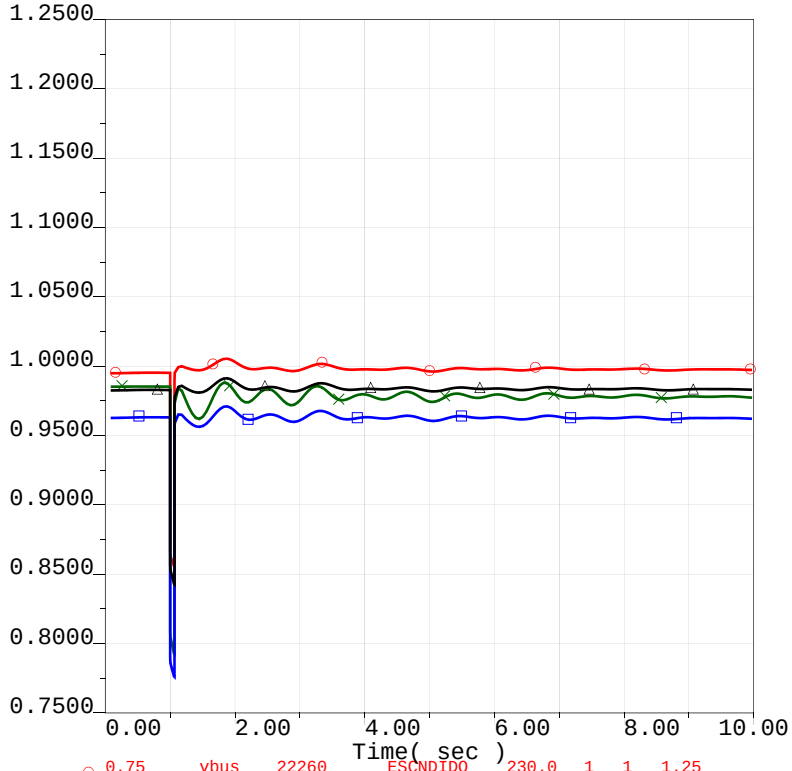


○ 0.75	vbus	24901	VSTA	230.0	1	1	1.25
× 0.75	vbus	24806	MIRAGE	230.0	1	1	1.25
□ 0.75	vbus	25406	J.HINDS	230.0	1	1	1.25
△ 0.75	vbus	24804	DEVERS	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 3B DISPATCH 3

la_nsfb_alt3b | Wed Jun 08 11:05:29 2005

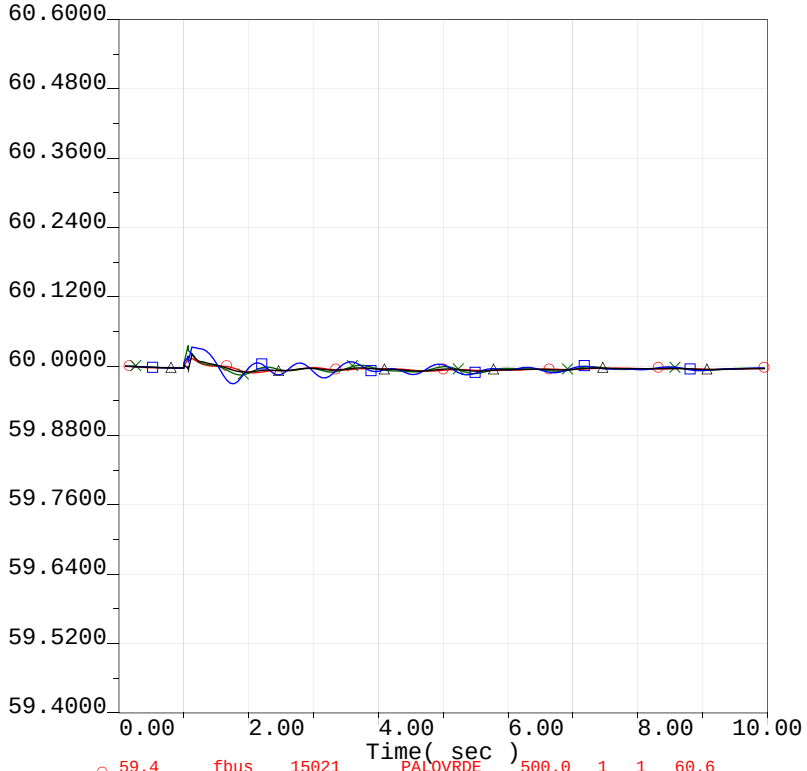
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 3B DISPATCH 3

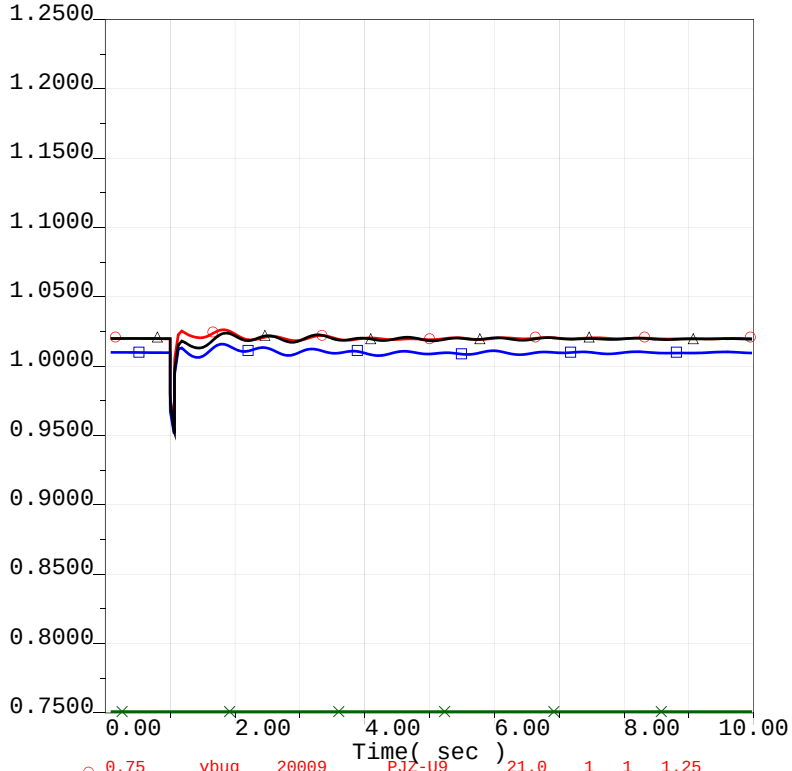
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 3B DISPATCH 3

CFE Busses Page 1

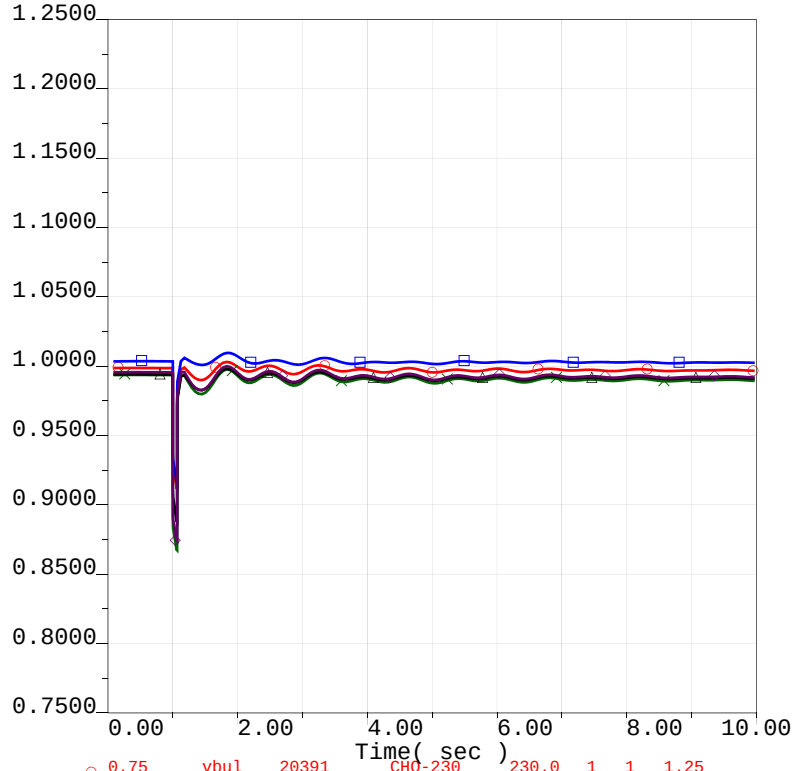


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 3B DISPATCH 3

la_nsfb_alt3b | Wed Jun 08 11:05:32 2005

CFE Busses Page 2

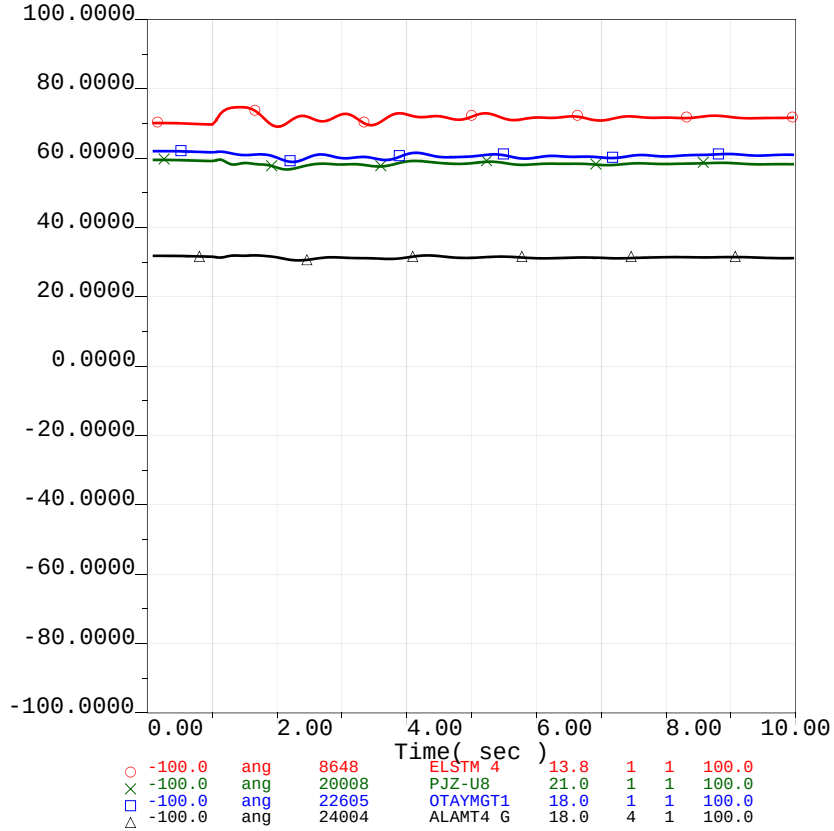


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 3B DISPATCH 3

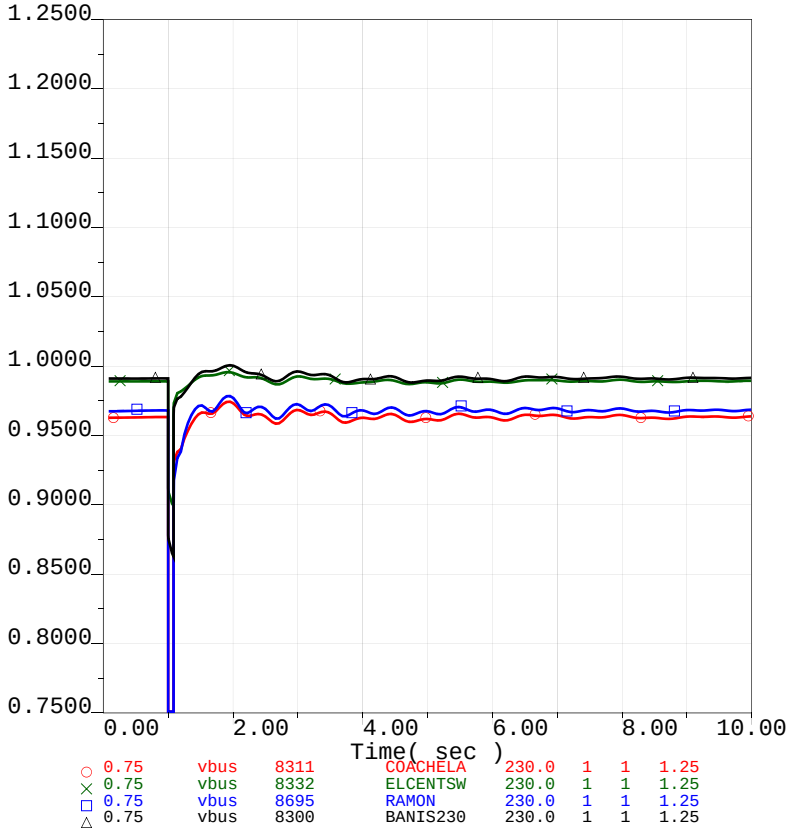
la_nsfb_alt3b | Wed Jun 08 11:05:32 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
Trip BANISTER - NEW SAN FELIPE 230 kV
Case ALT 3B DISPATCH 3

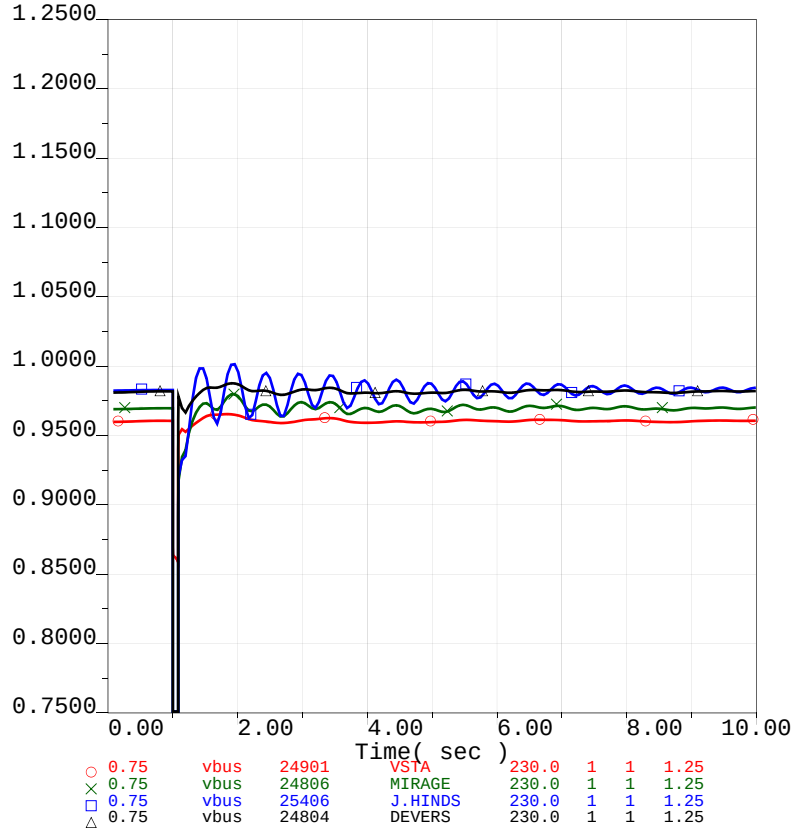
IID Busses



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2 DISPATCH 3

la_p42_noras_alt2 | Wed Jun 08 11:17:04 2005

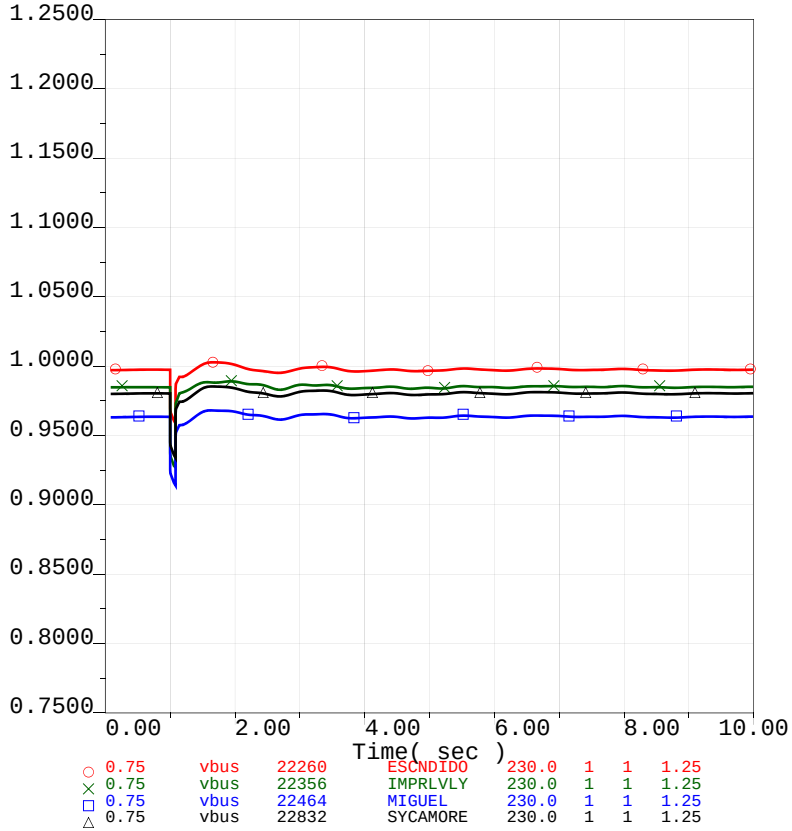
SCE Busses



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2 DISPATCH 3

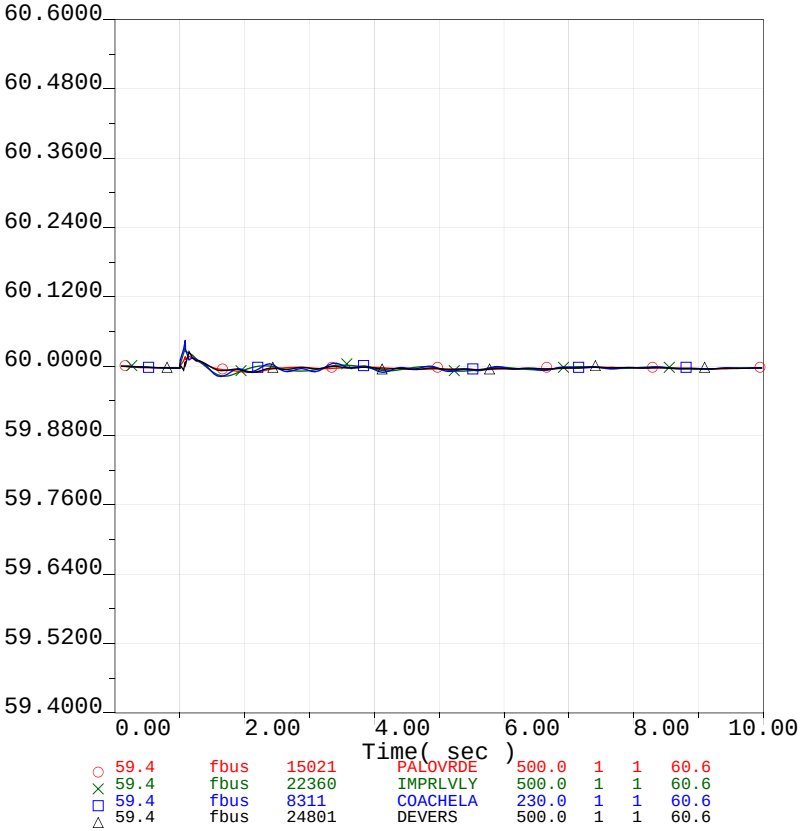
la_p42_noras_alt2 | Wed Jun 08 11:17:05 2005

SDGE Busses



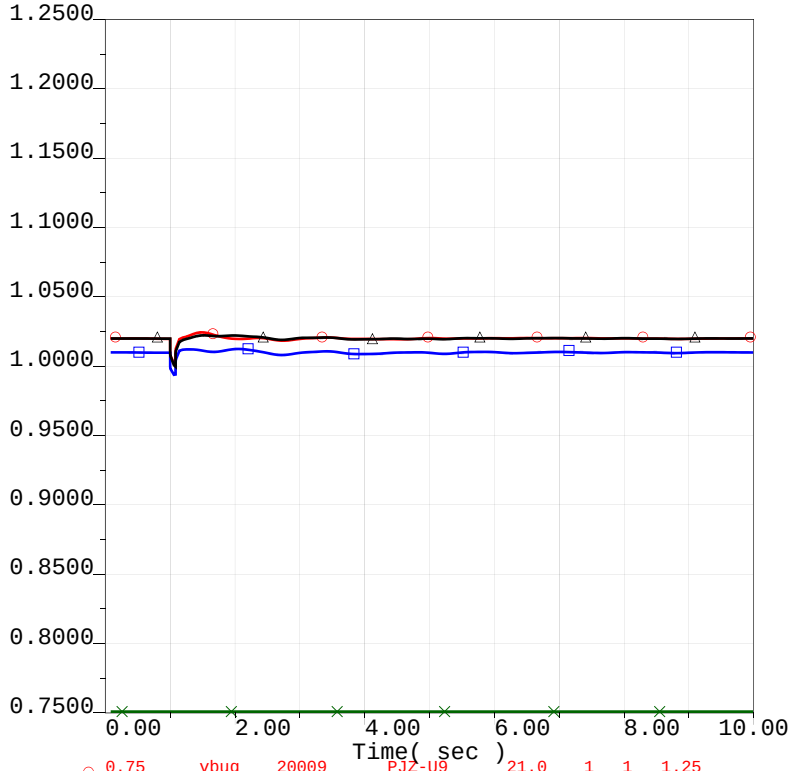
IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2 DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2 DISPATCH 3

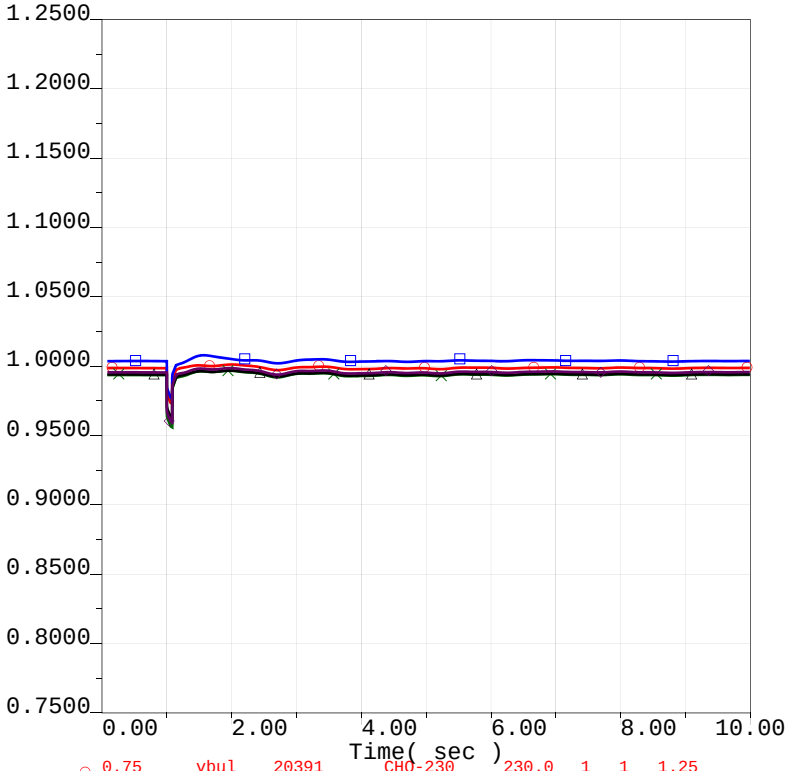
CFE Busses Page 1



○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2 DISPATCH 3

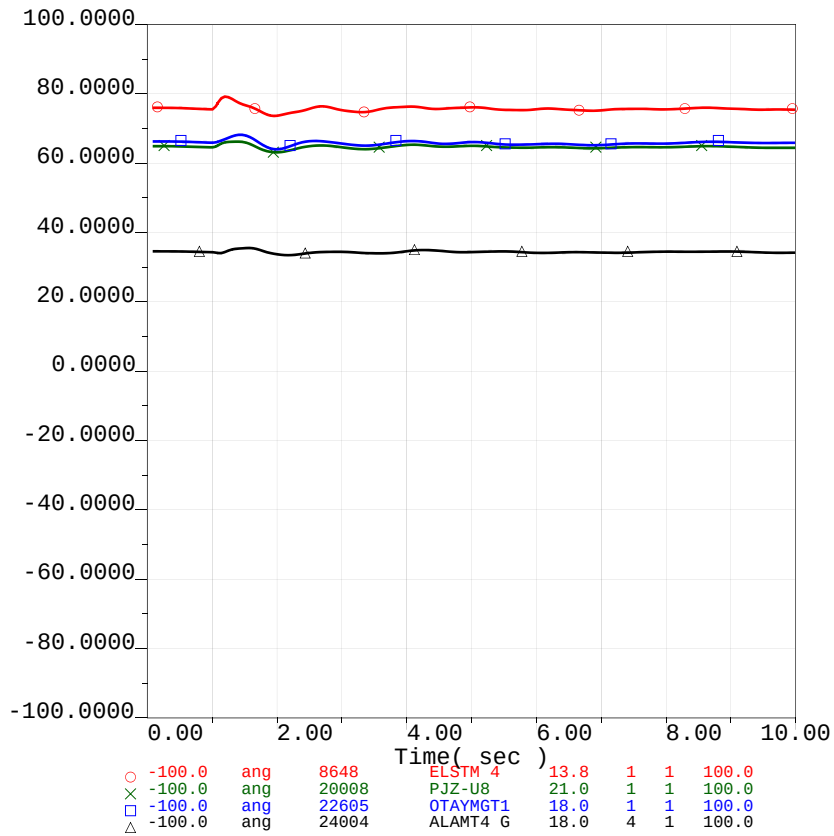
CFE Busses Page 2



○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2 DISPATCH 3

Rotor Angles for Gen Busses

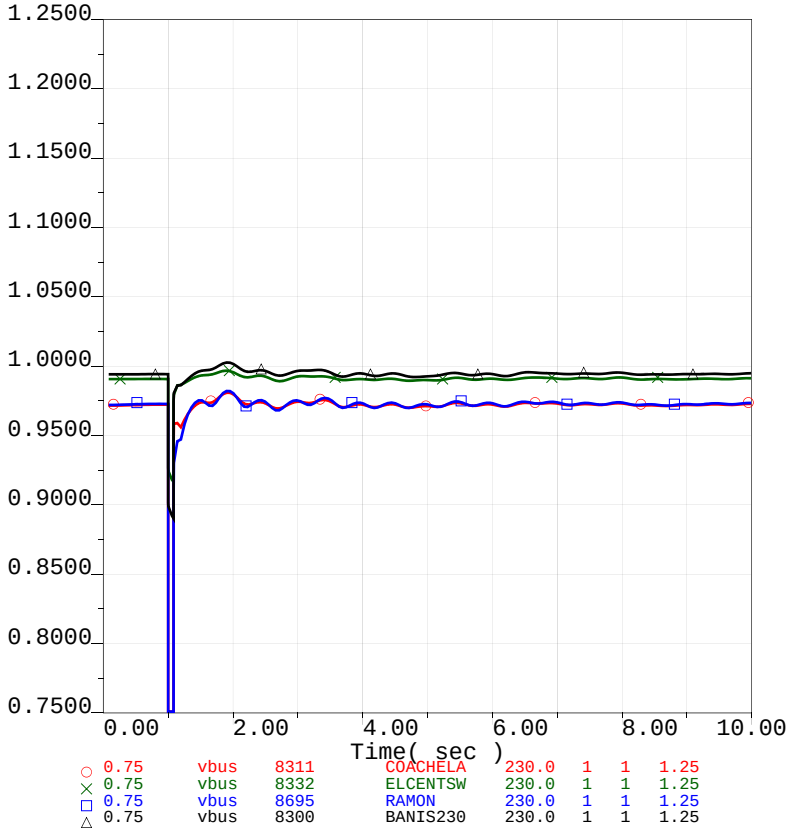


IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2 DISPATCH 3

la_p42_noras_alt2

Wed Jun 08 11:17:09 2005

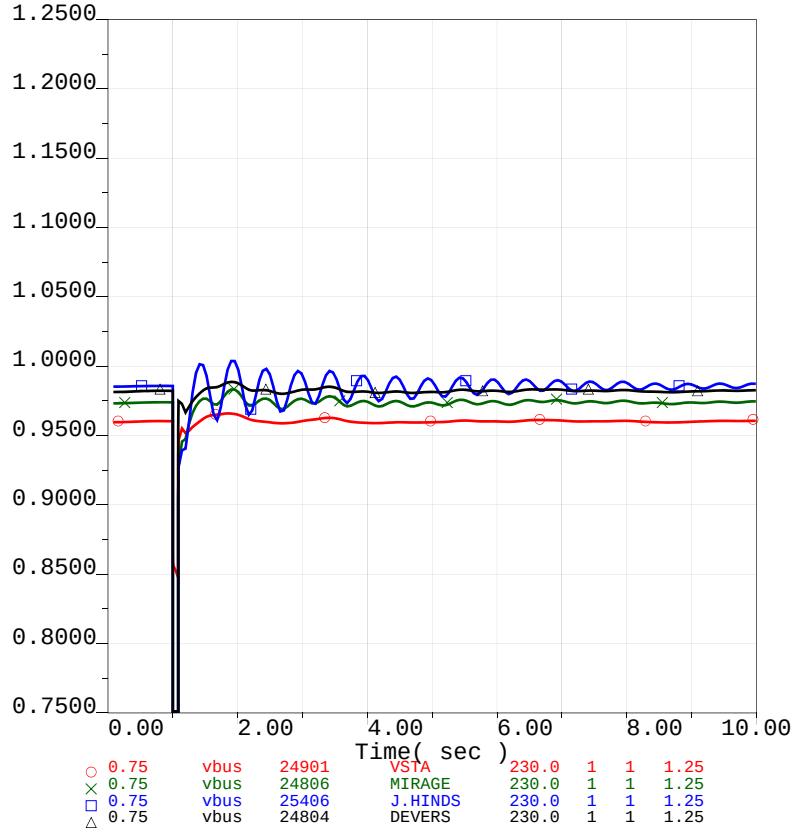
IID Busses



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2a DISPATCH 3

la_p42_noras_alt2a | Wed Jun 08 11:18:01 2005

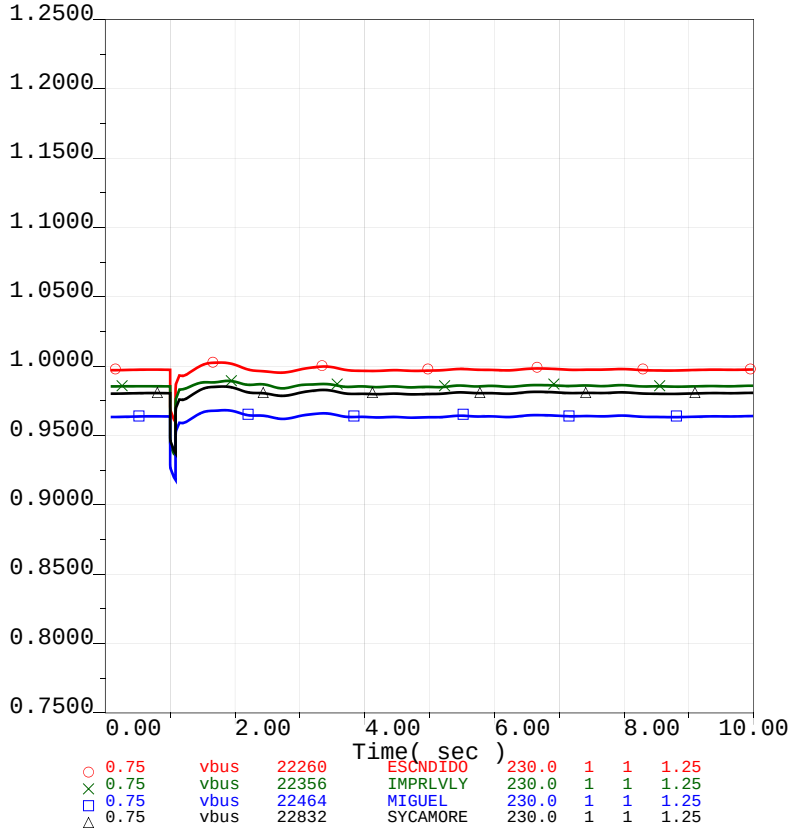
SCE Busses



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2a DISPATCH 3

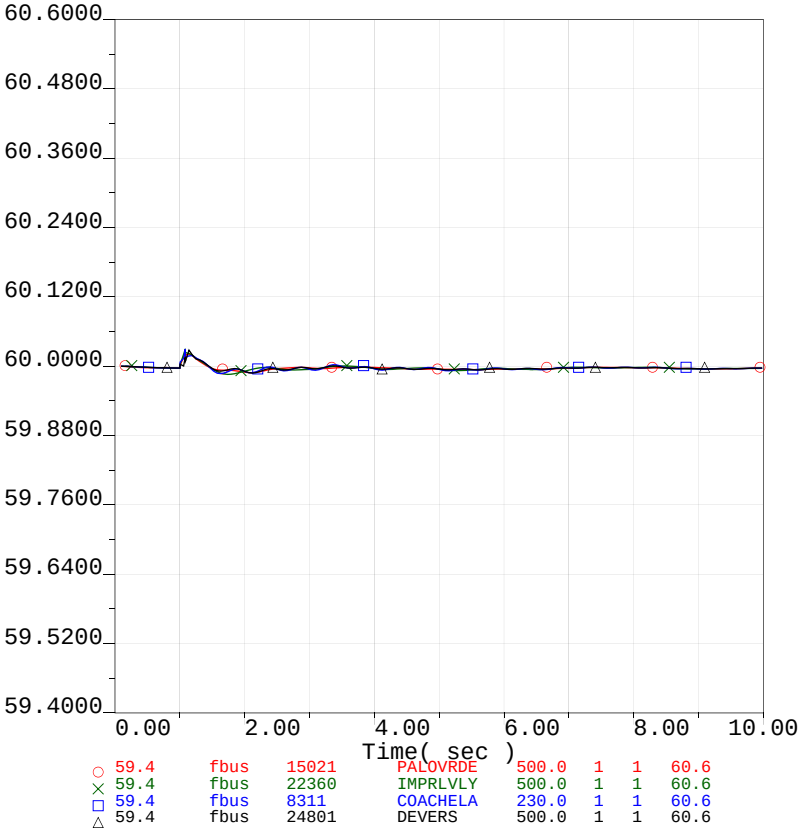
la_p42_noras_alt2a | Wed Jun 08 11:18:02 2005

SDGE Busses



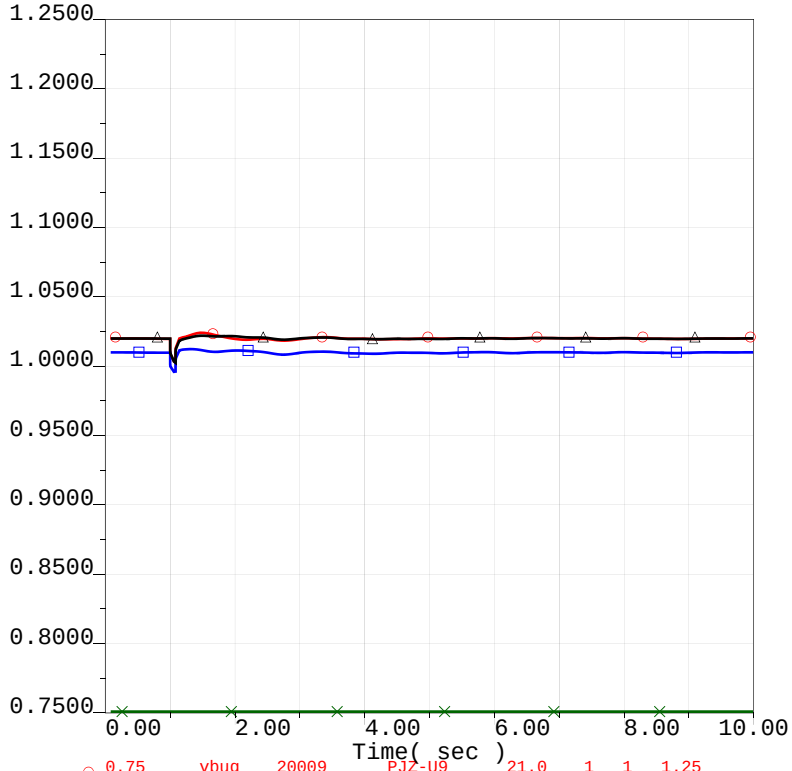
IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2a DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2a DISPATCH 3

CFE Busses Page 1

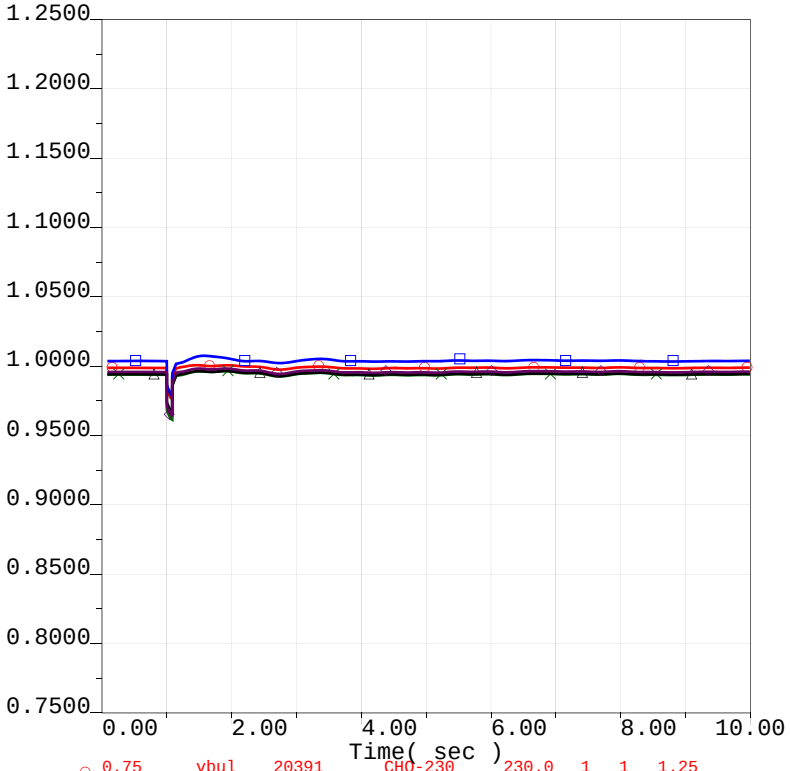


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2a DISPATCH 3

la_p42_noras_alt2a | Wed Jun 08 11:18:04 2005

CFE Busses Page 2

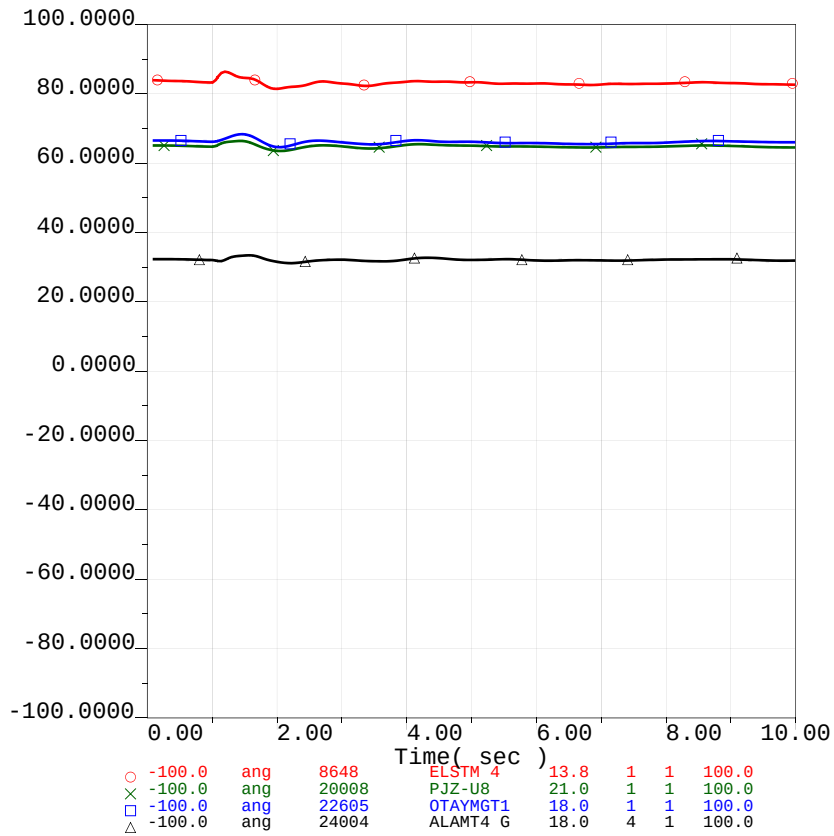


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2a DISPATCH 3

la_p42_noras_alt2a | Wed Jun 08 11:18:05 2005

Rotor Angles for Gen Busses

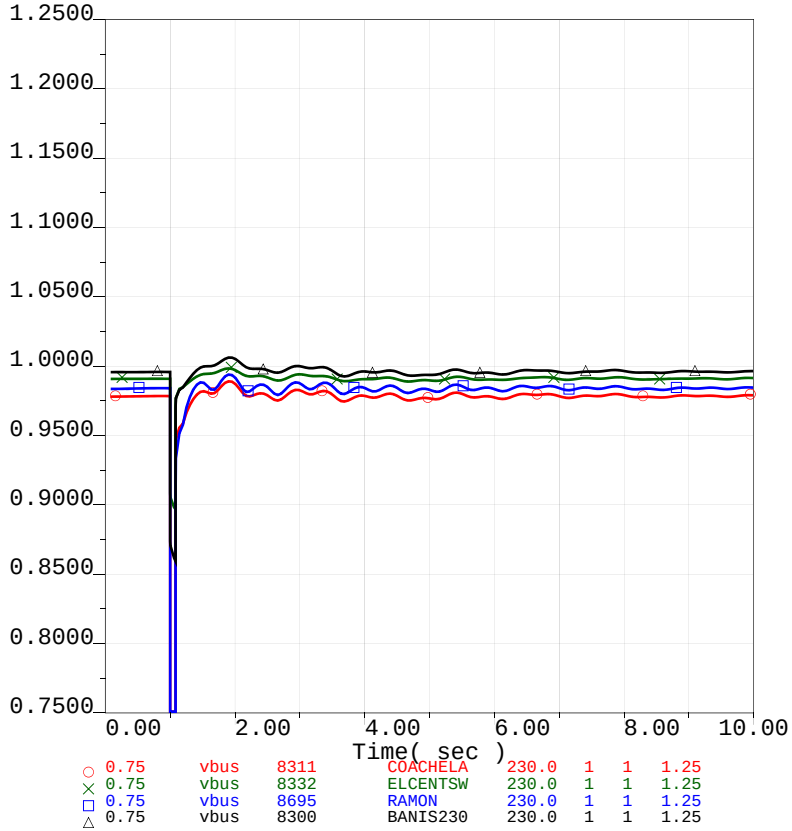


IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 2a DISPATCH 3

la_p42_noras_alt2a

Wed Jun 08 11:18:05 2005

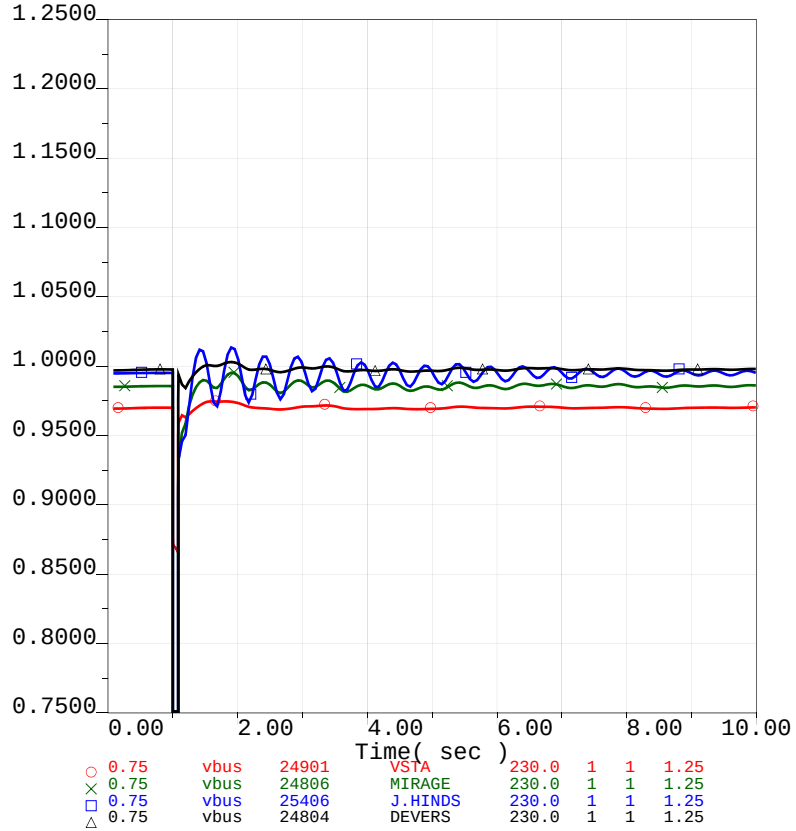
IID Busses



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 3B DISPATCH 3

la_p42_noras_alt3b | Wed Jun 08 12:30:10 2005

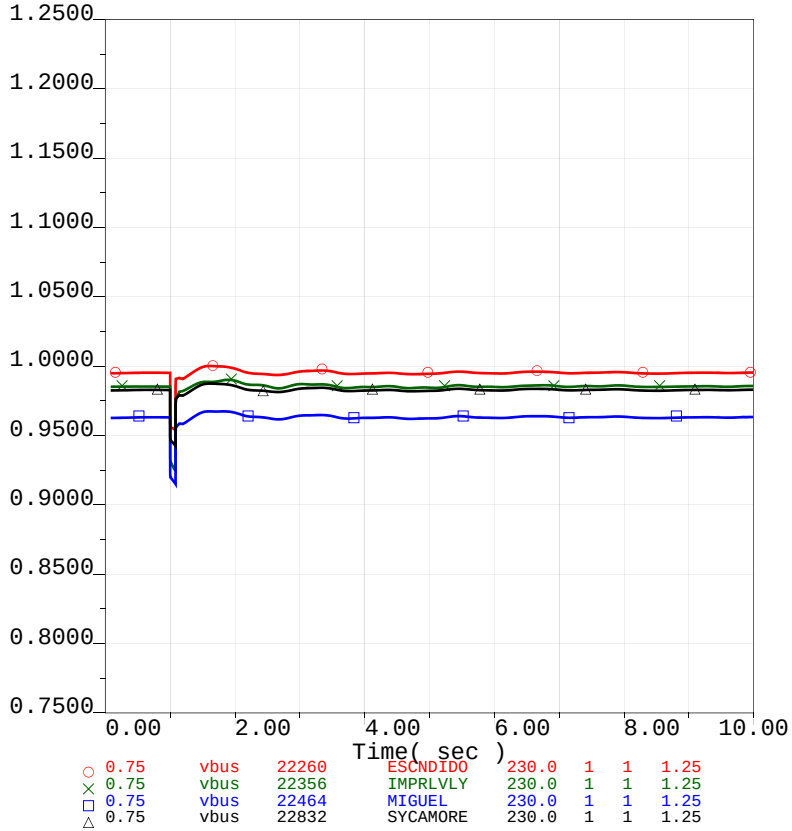
SCE Busses



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 3B DISPATCH 3

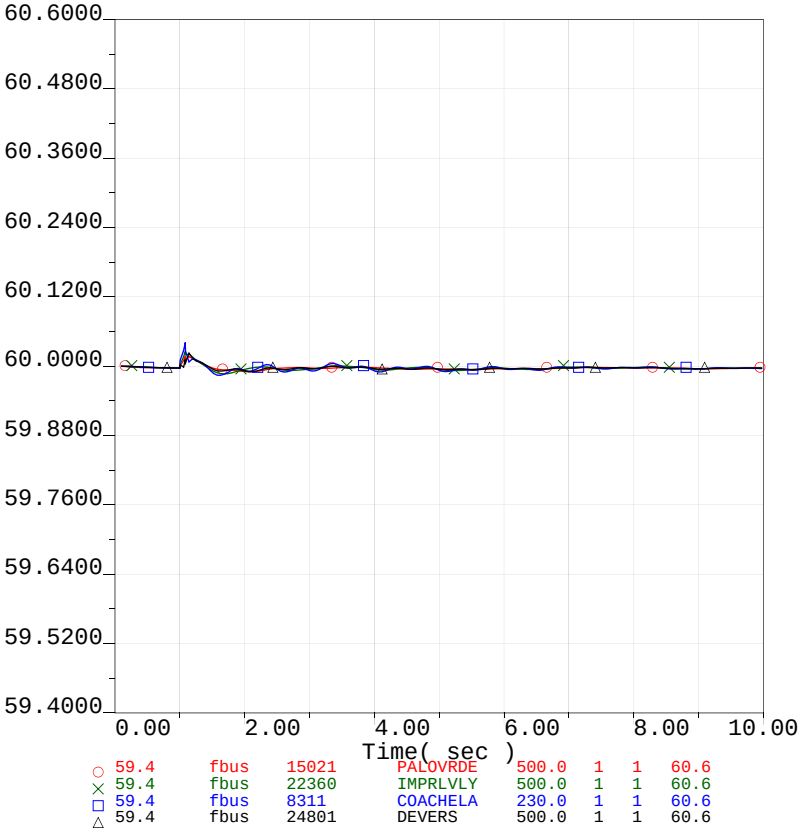
la_p42_noras_alt3b | Wed Jun 08 12:30:11 2005

SDGE Busses



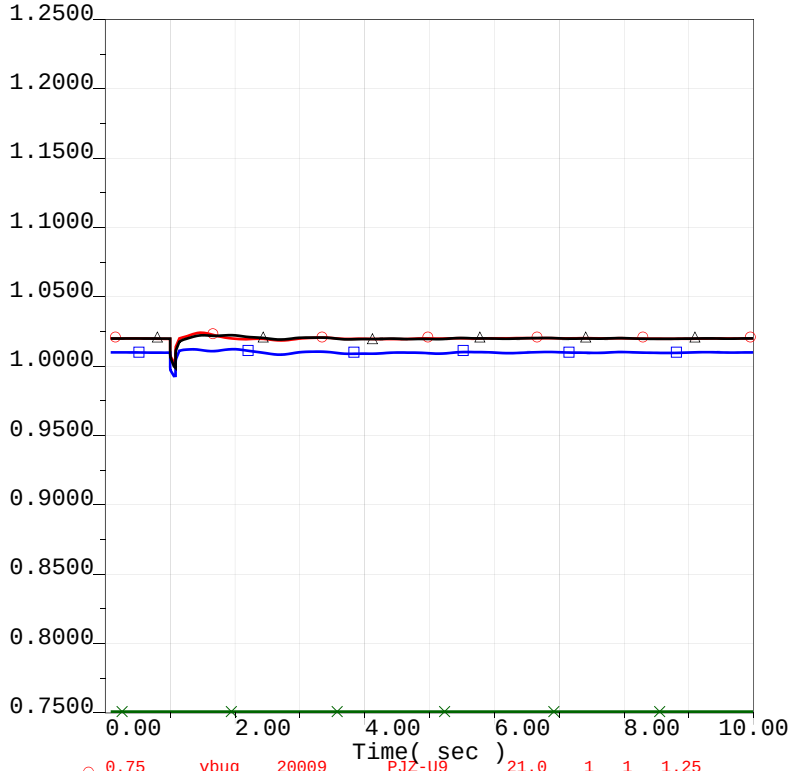
IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 3B DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 3B DISPATCH 3

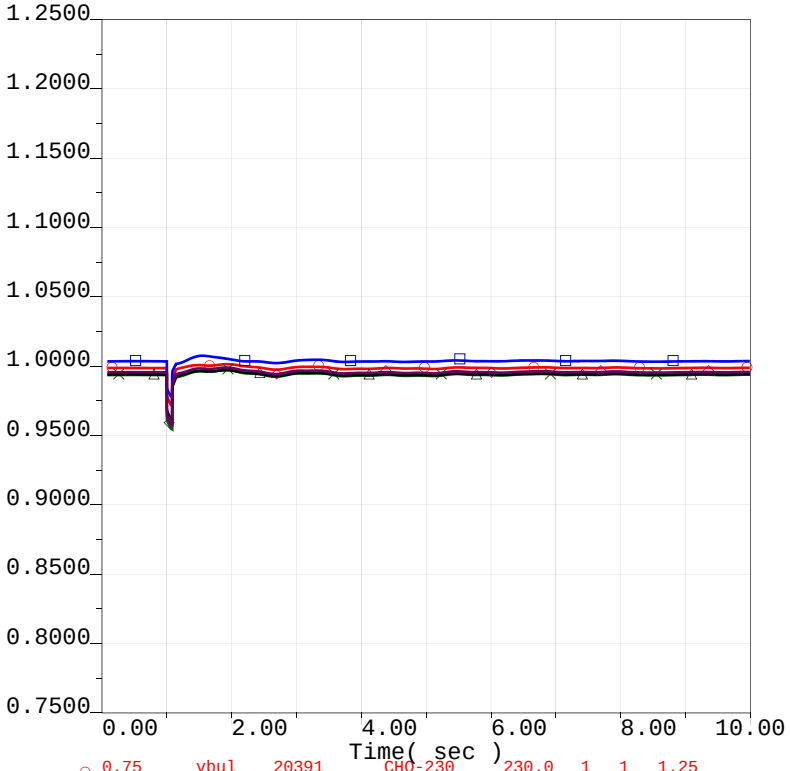
CFE Busses Page 1



○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 3B DISPATCH 3

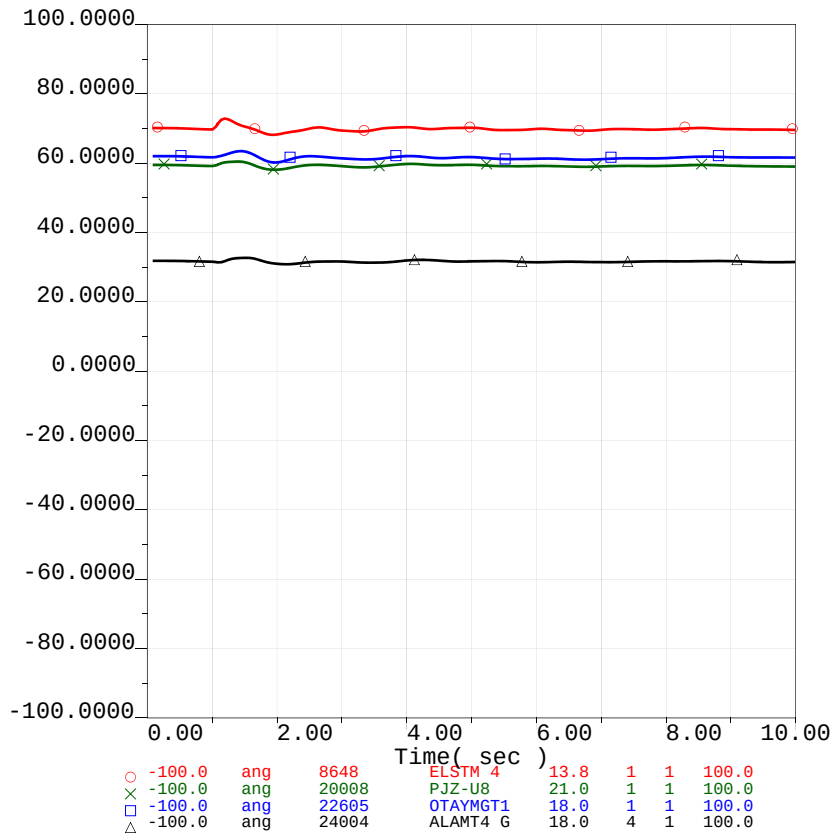
CFE Busses Page 2



○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

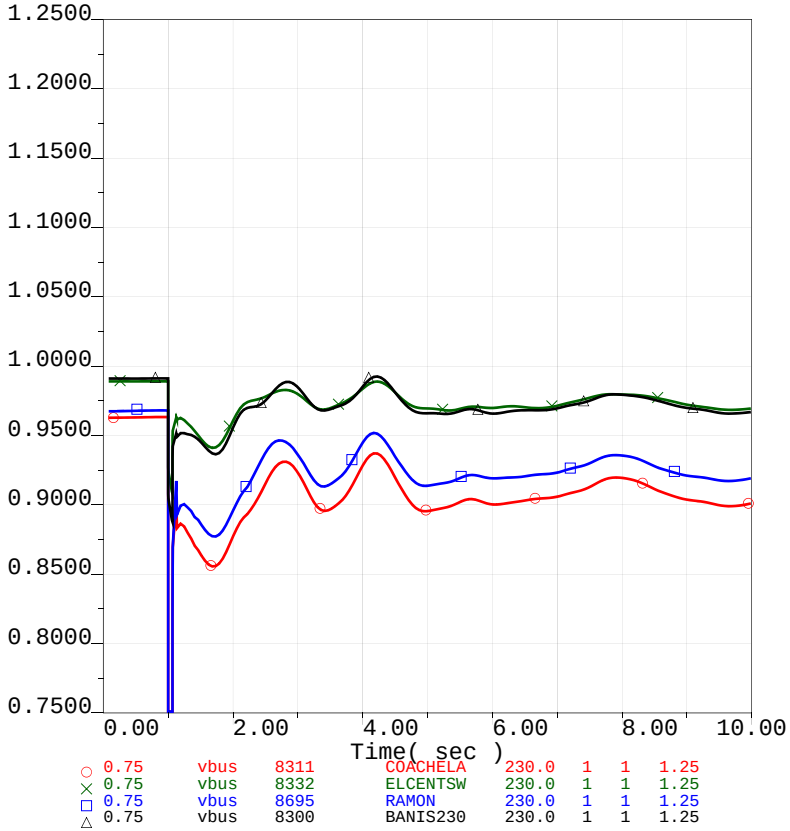
IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 3B DISPATCH 3

Rotor Angles for Gen Busses



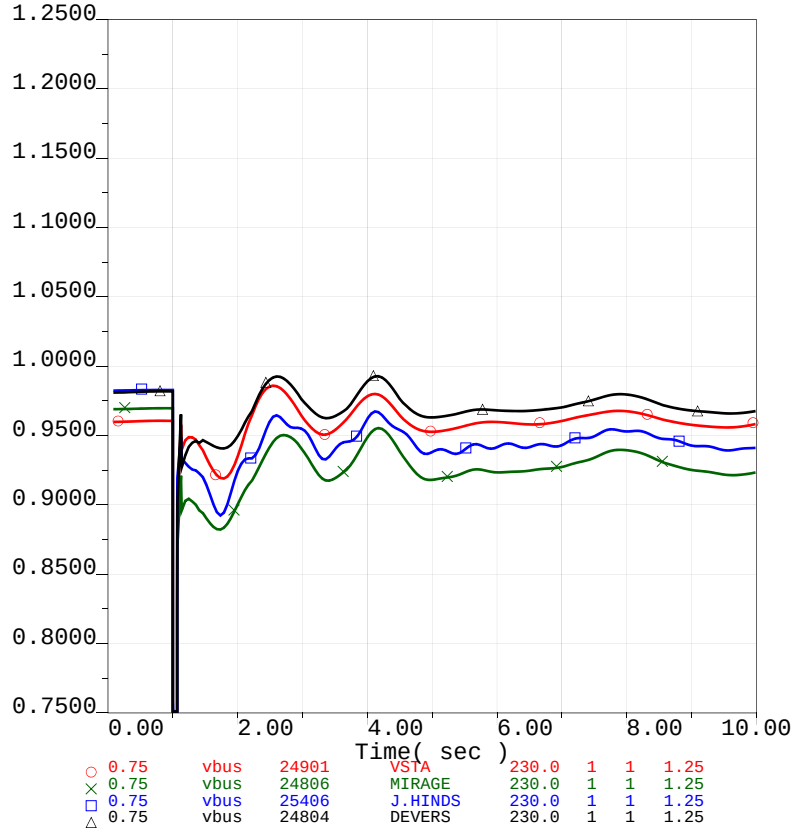
IVSG STUDY
Light Autumn Case
Trip PATH 42
Case ALT 3B DISPATCH 3

IID Busses



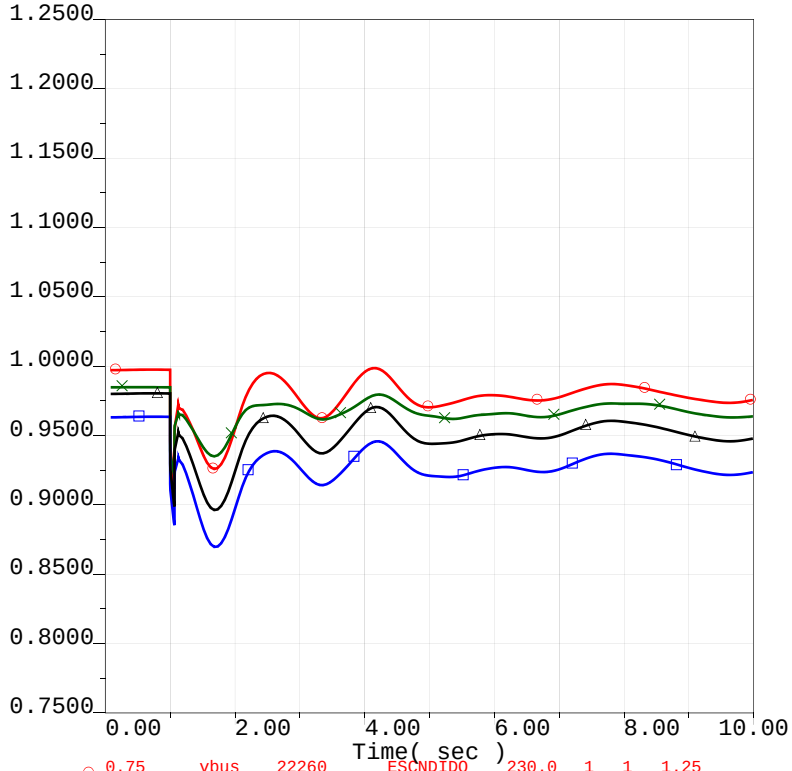
IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 2 DISPATCH 3

SCE Busses



IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 2 DISPATCH 3

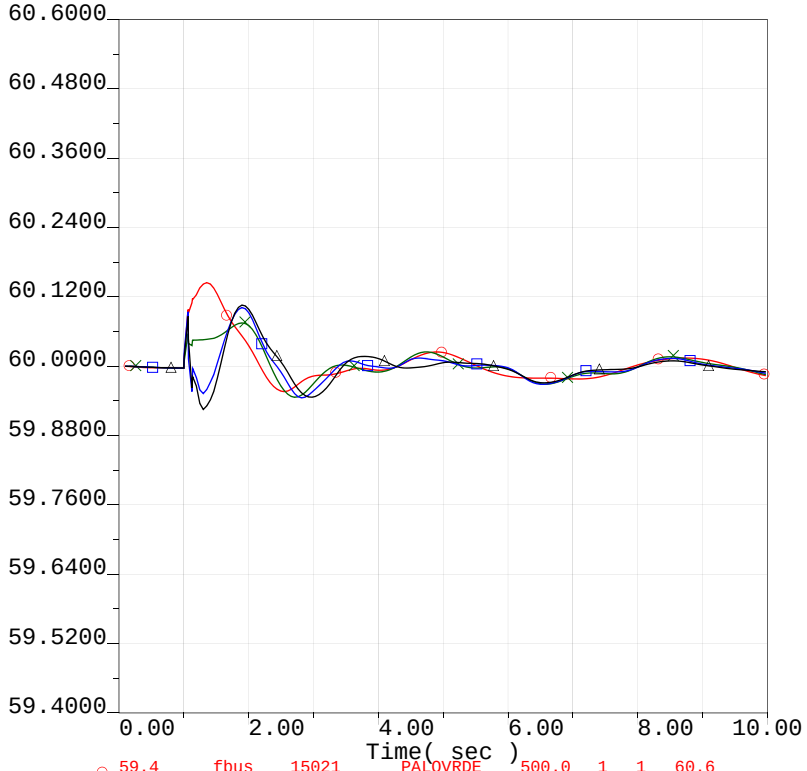
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 2 DISPATCH 3

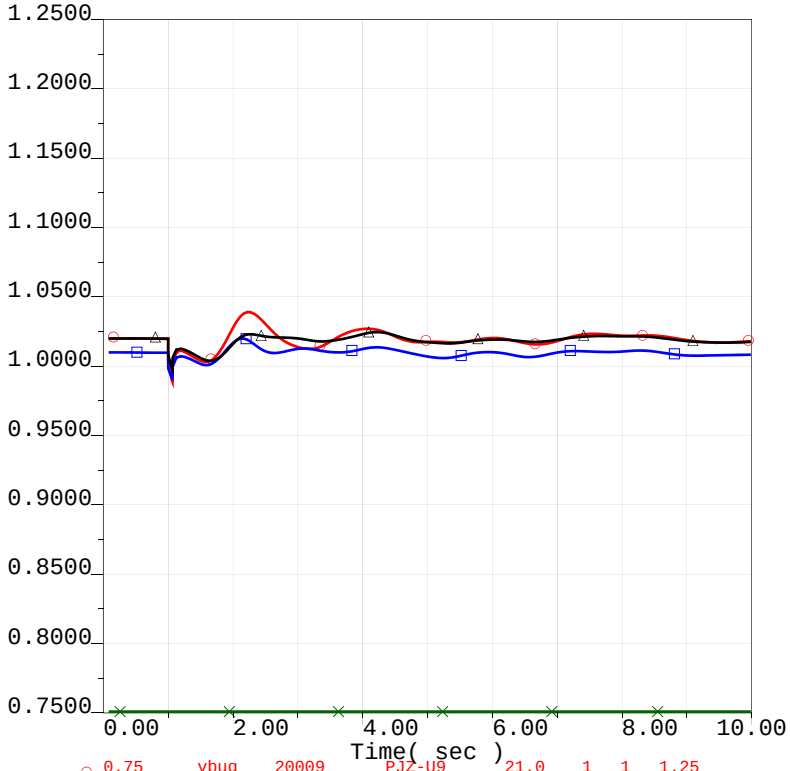
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 2 DISPATCH 3

CFE Busses Page 1

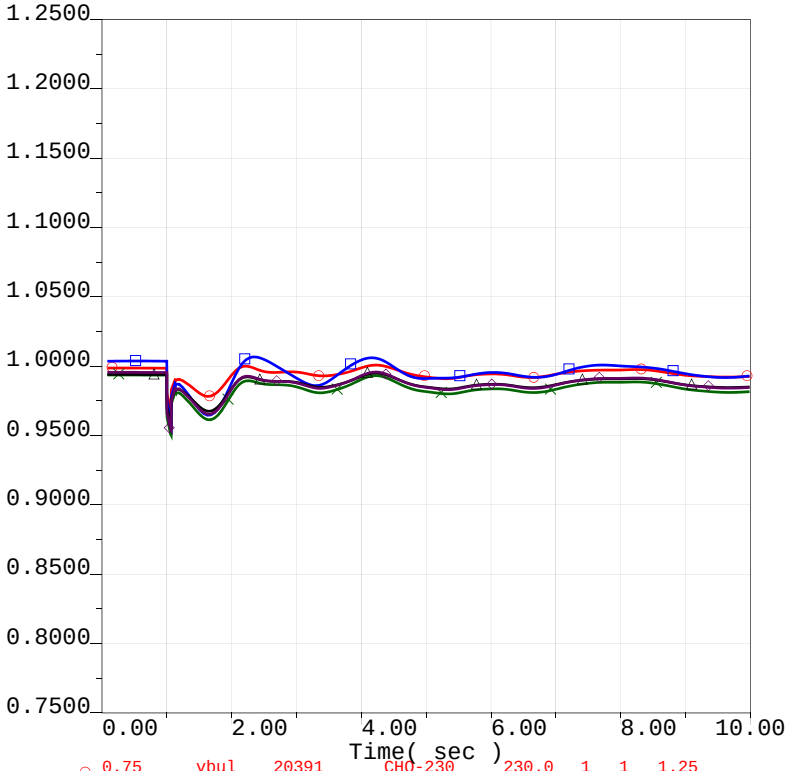


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 2 DISPATCH 3

la_pvdv_alt2 | Wed Jun 08 12:32:02 2005

CFE Busses Page 2

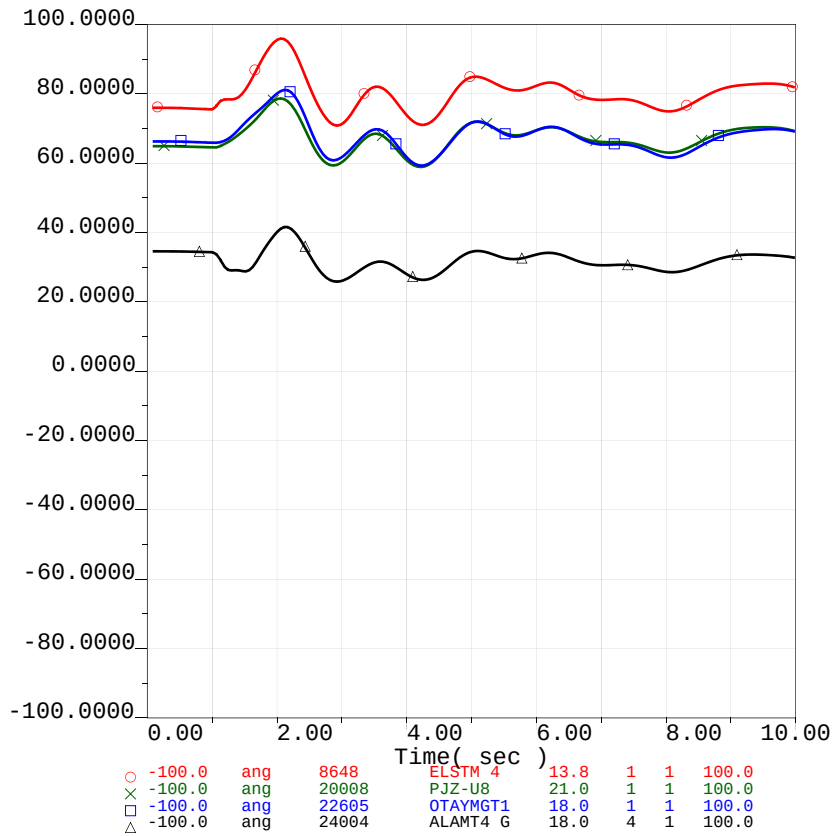


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 2 DISPATCH 3

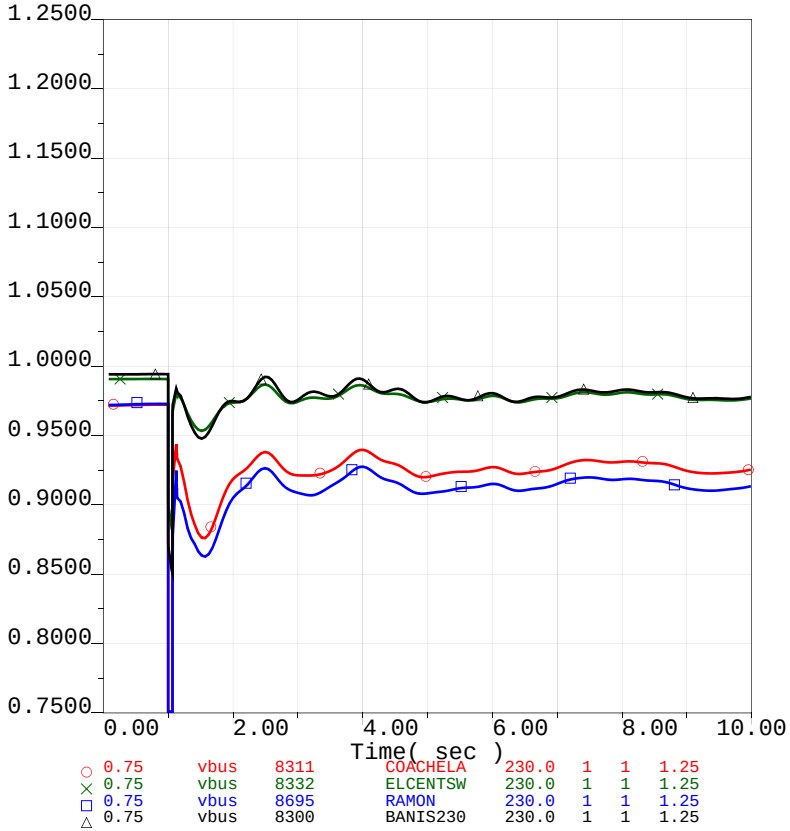
la_pvdv_alt2 | Wed Jun 08 12:32:03 2005

Rotor Angles for Gen Busses



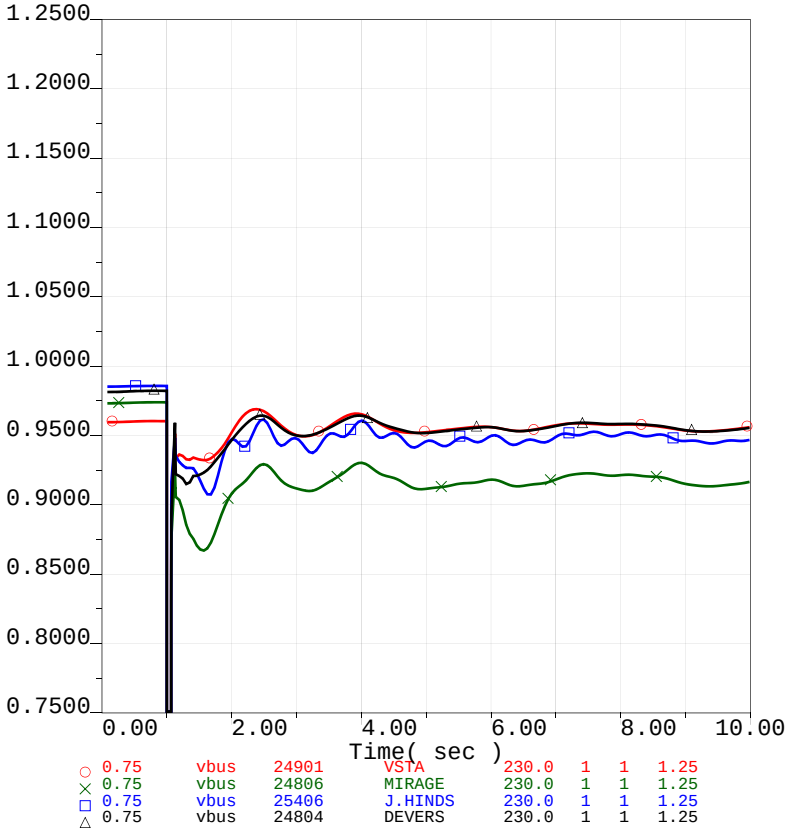
IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 2 DISPATCH 3

IID Busses



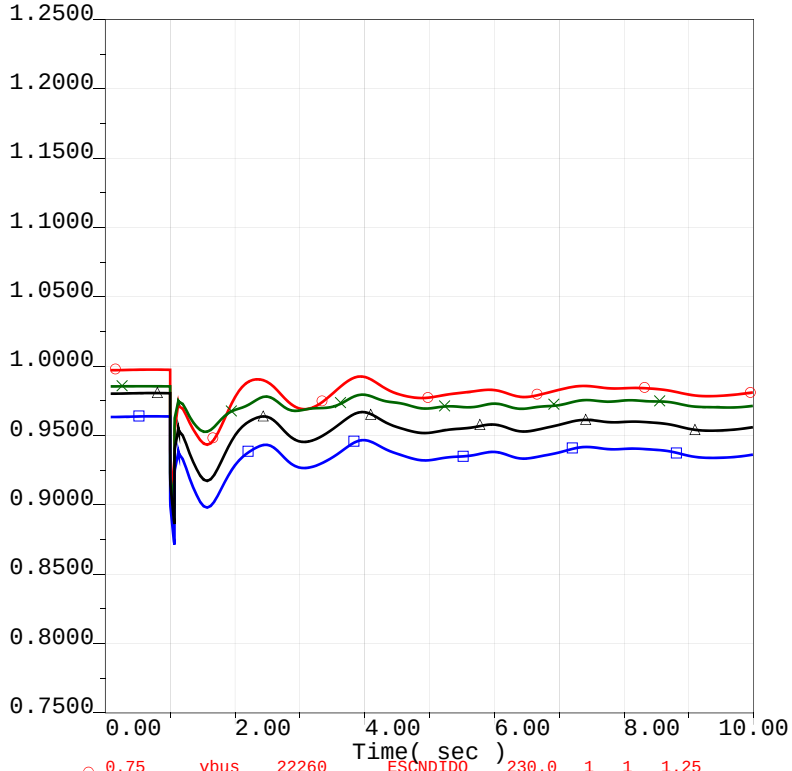
IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1 INDIAN HILLS - DEVERS 500 kV
Case ALT 2A DISPATCH 3

SCE Busses



IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1 INDIAN HILLS - DEVERS 500 kV
Case ALT 2A DISPATCH 3

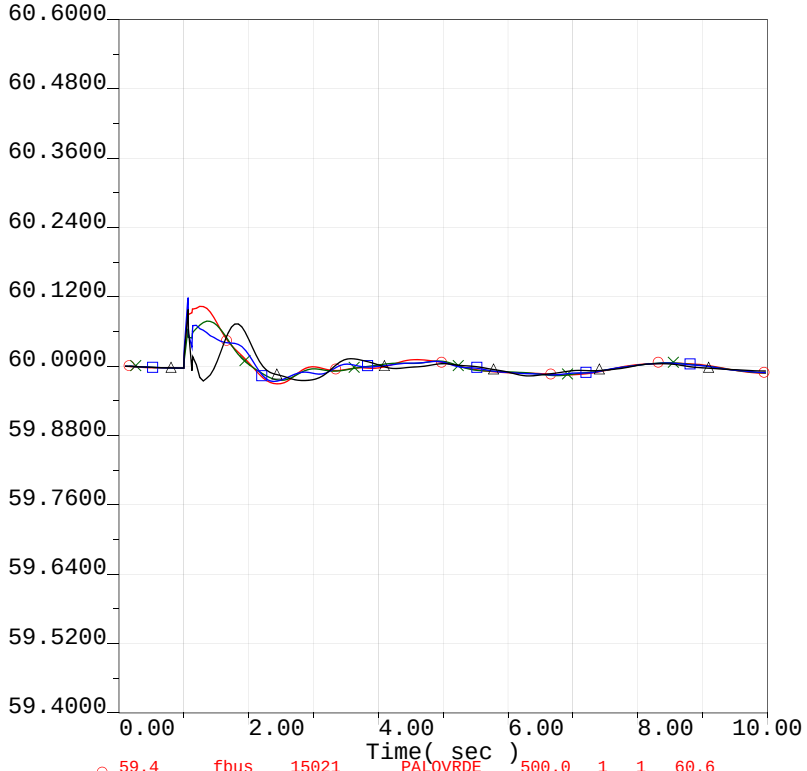
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1 INDIAN HILLS - DEVERS 500 kV
Case ALT 2A DISPATCH 3

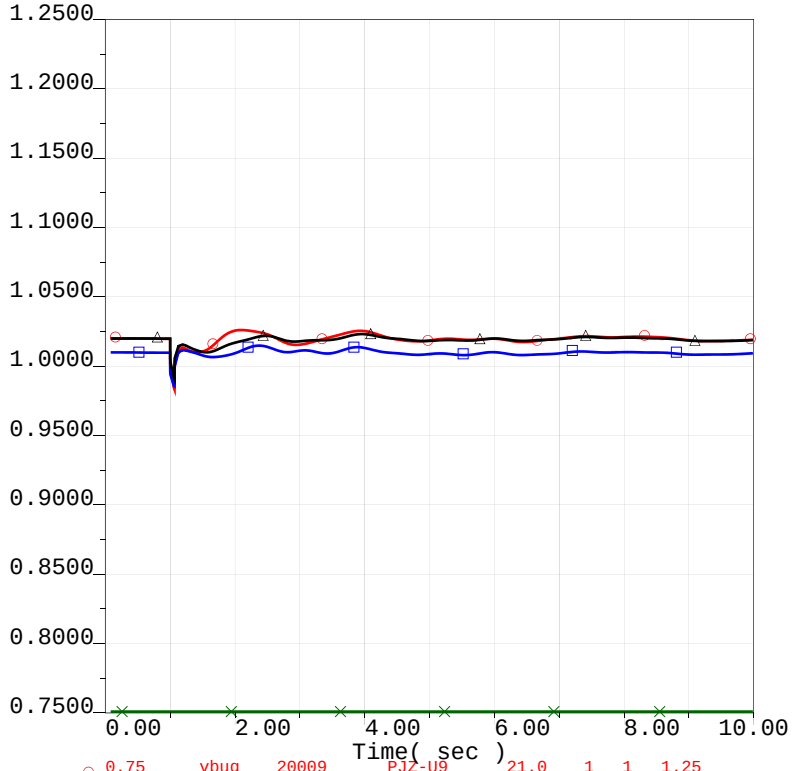
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1 INDIAN HILLS - DEVERS 500 kV
Case ALT 2A DISPATCH 3

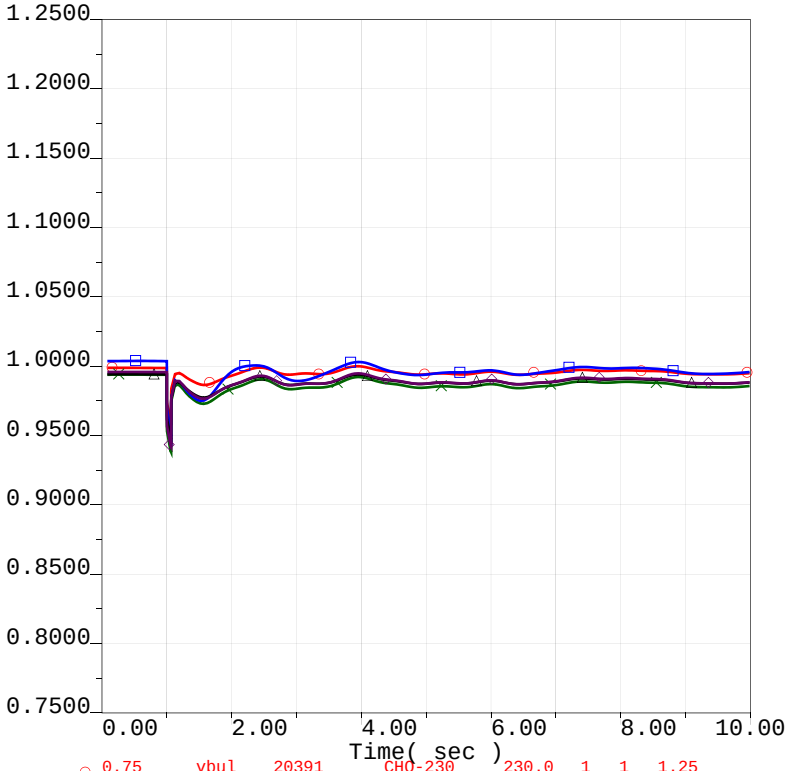
CFE Busses Page 1



○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1 INDIAN HILLS - DEVERS 500 kV
Case ALT 2A DISPATCH 3

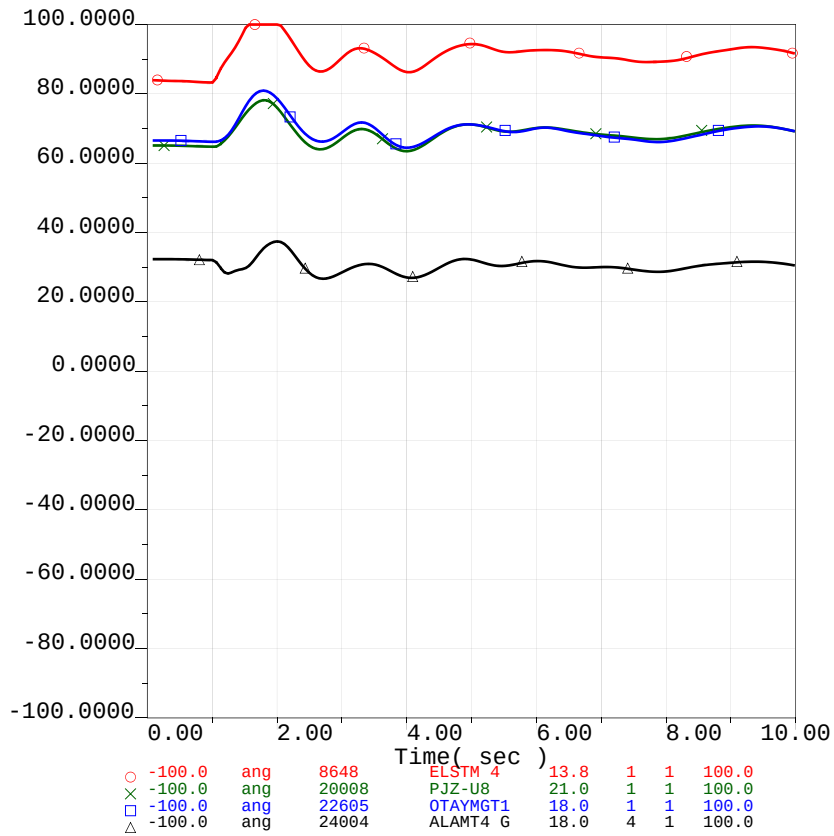
CFE Busses Page 2



○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

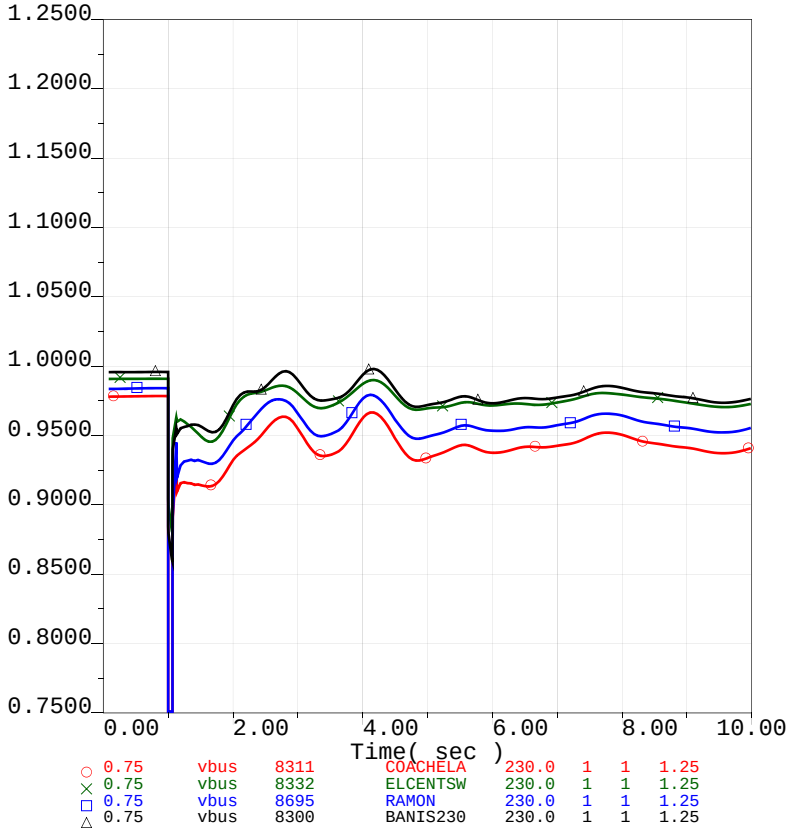
IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1 INDIAN HILLS - DEVERS 500 kV
Case ALT 2A DISPATCH 3

Rotor Angles for Gen Busses



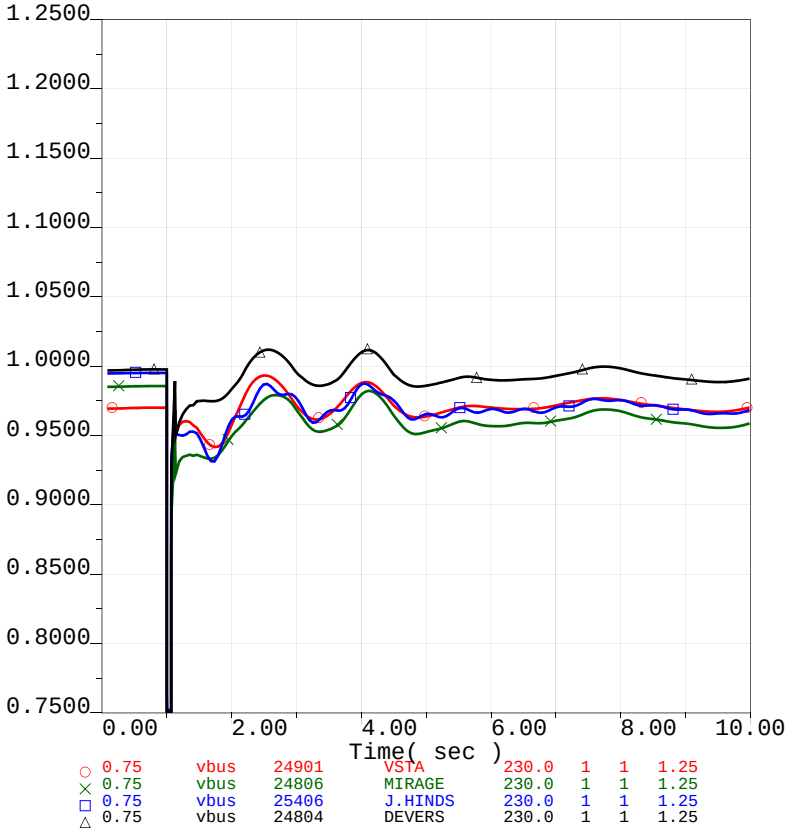
IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1 INDIAN HILLS - DEVERS 500 kV
Case ALT 2A DISPATCH 3

IID Busses



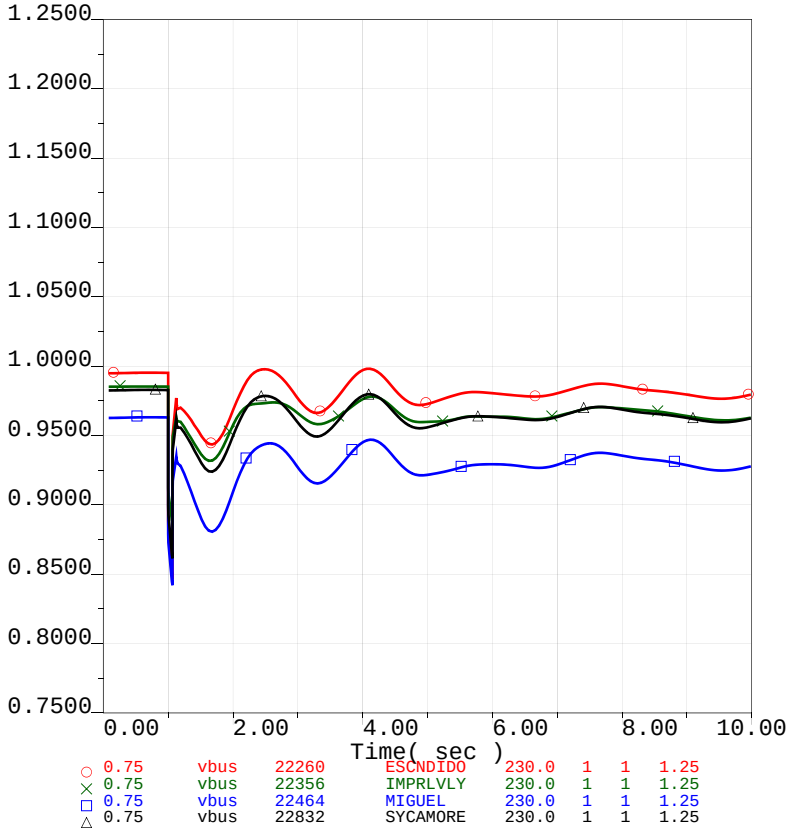
IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 3B DISPATCH 3

SCE Busses



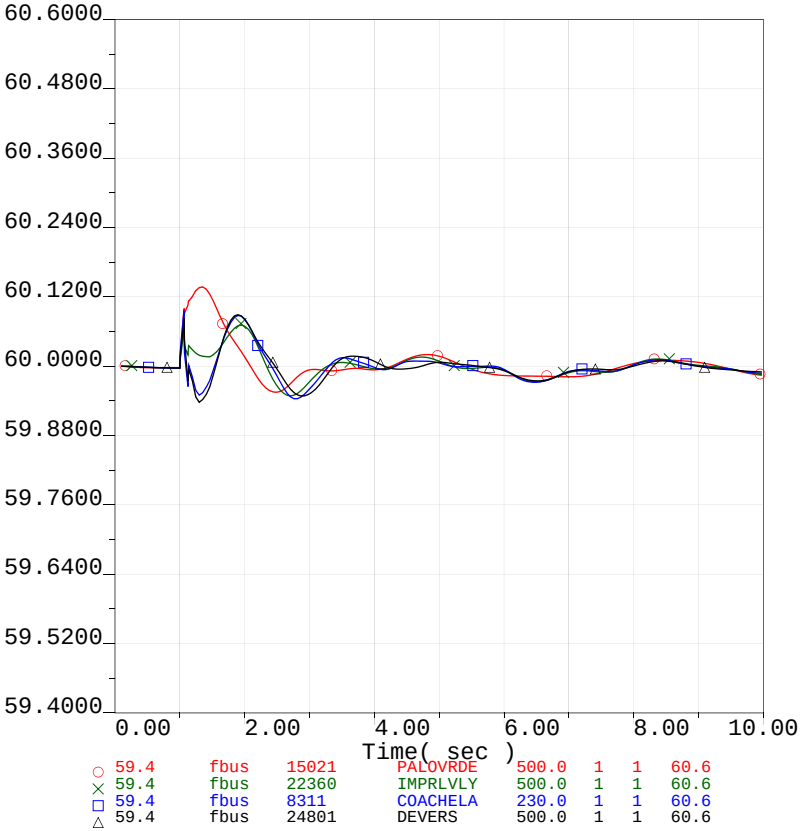
IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 3B DISPATCH 3

SDGE Busses



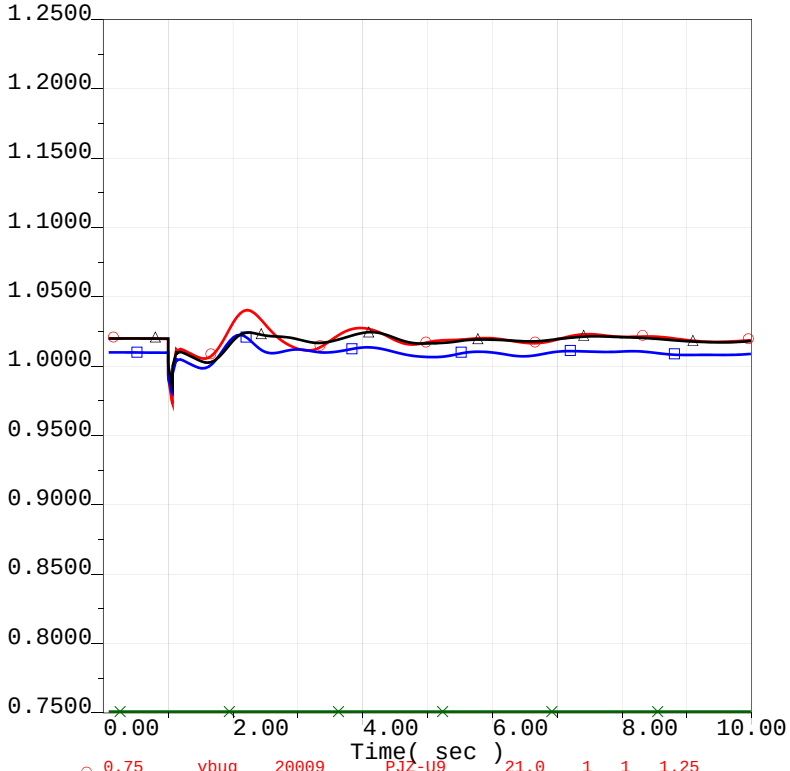
IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 3B DISPATCH 3

FBus Readings



IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 3B DISPATCH 3

CFE Busses Page 1

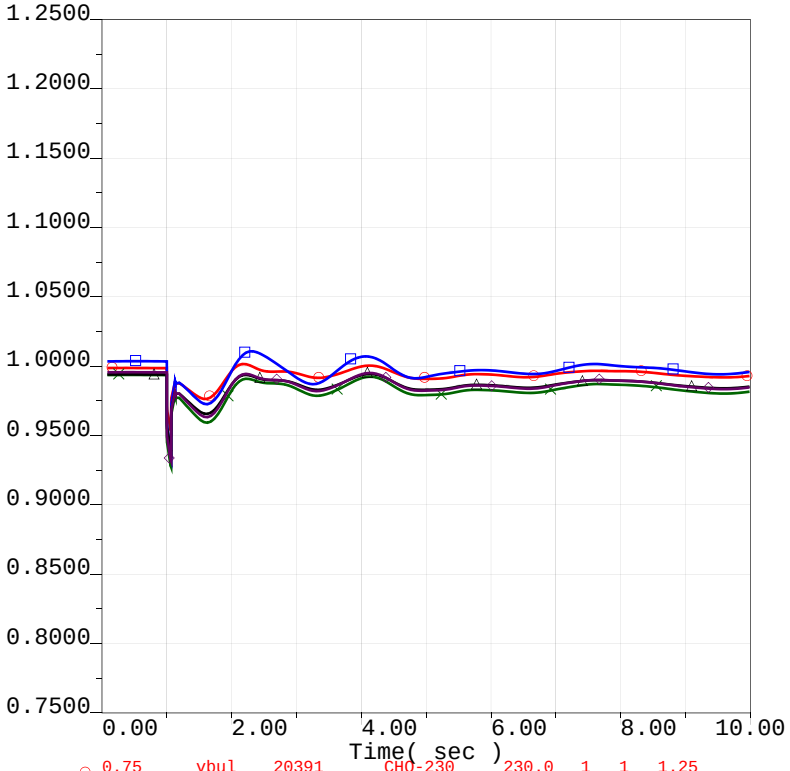


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 3B DISPATCH 3

la_pvdv_alt3b | Wed Jun 08 12:34:13 2005

CFE Busses Page 2

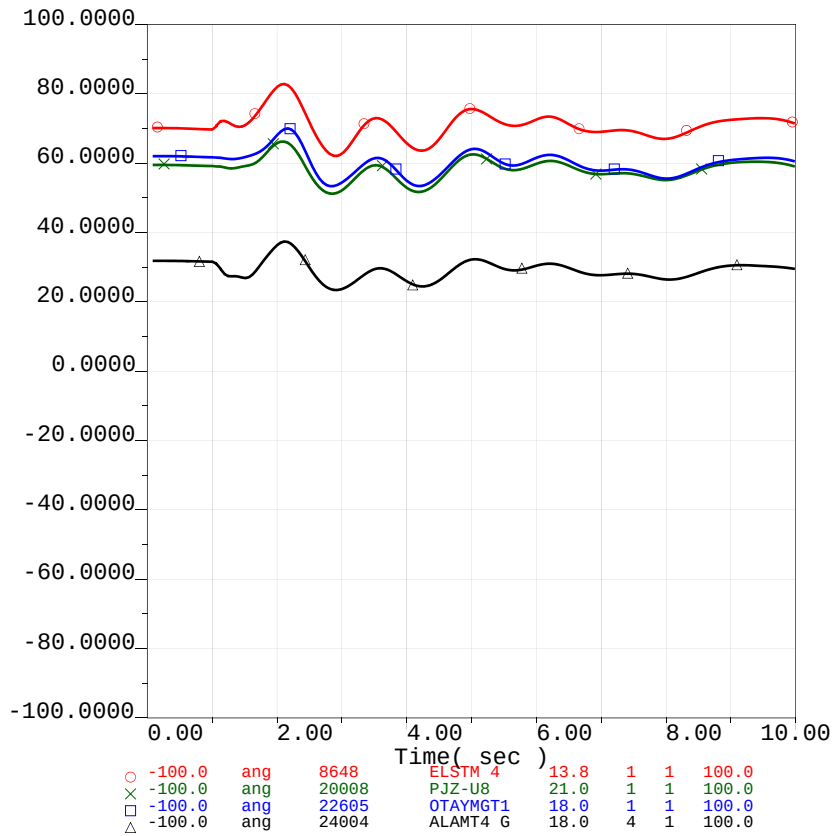


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 3B DISPATCH 3

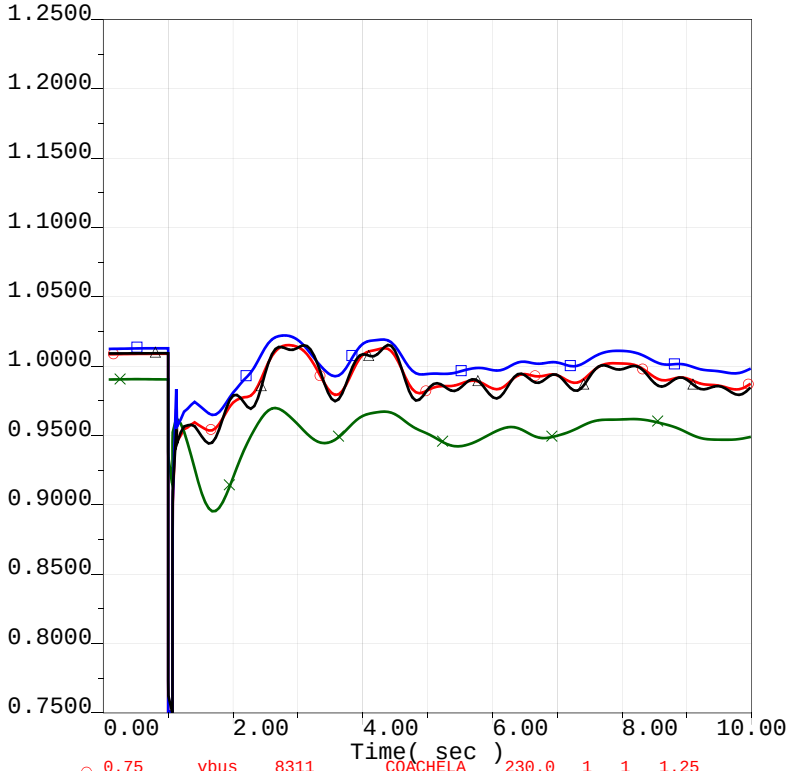
la_pvdv_alt3b | Wed Jun 08 12:34:14 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case ALT 3B DISPATCH 3

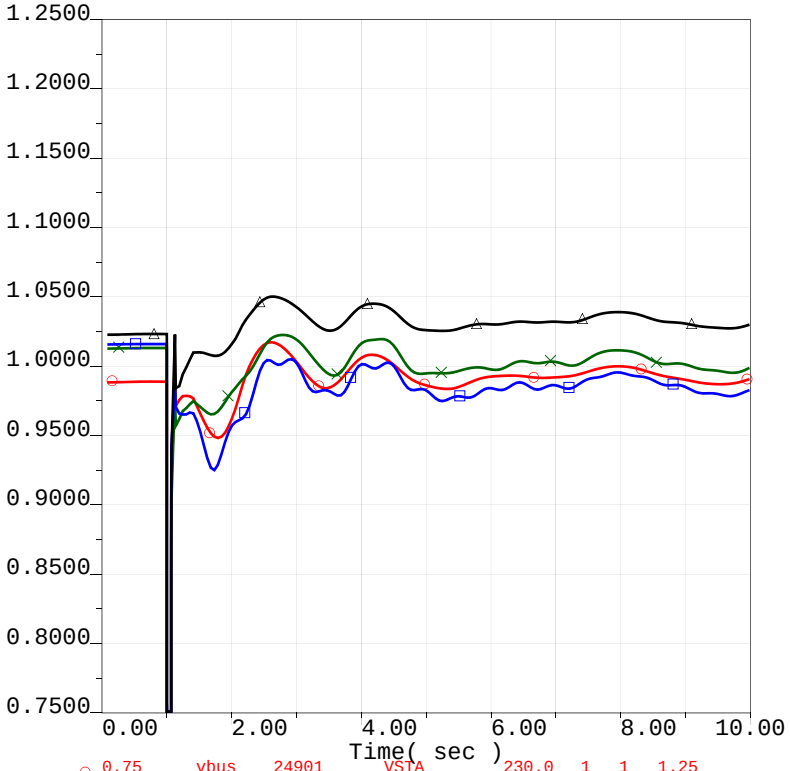
IID Busses



○ 0.75	vbus	8311	COACHELA	230.0	1	1	1.25
× 0.75	vbus	8332	ELCENTSW	230.0	1	1	1.25
□ 0.75	vbus	8695	RAMON	230.0	1	1	1.25
△ 0.75	vbus	8300	BANIS230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case Rev 5 Base Case

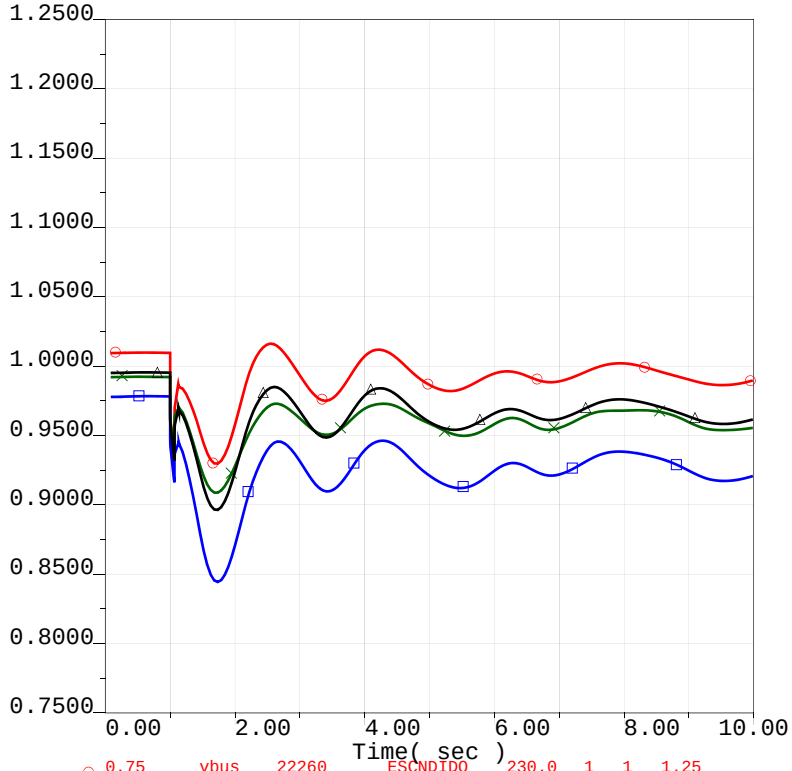
SCE Busses



○ 0.75	vbus	24901	VSTA	230.0	1	1	1.25
× 0.75	vbus	24806	MIRAGE	230.0	1	1	1.25
□ 0.75	vbus	25406	J.HINDS	230.0	1	1	1.25
△ 0.75	vbus	24804	DEVERS	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case Rev 5 Base Case

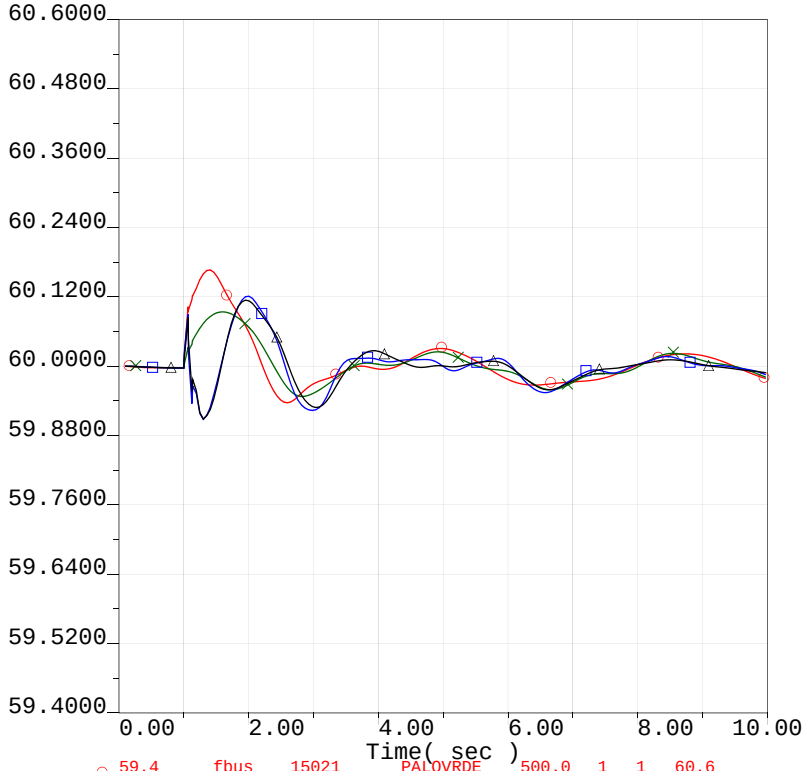
SDGE Busses



○ 0.75	vbus	22260	ESCNDIDO	230.0	1	1	1.25
× 0.75	vbus	22356	IMPRLVLY	230.0	1	1	1.25
□ 0.75	vbus	22464	MIGUEL	230.0	1	1	1.25
△ 0.75	vbus	22832	SYCAMORE	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case Rev 5 Base Case

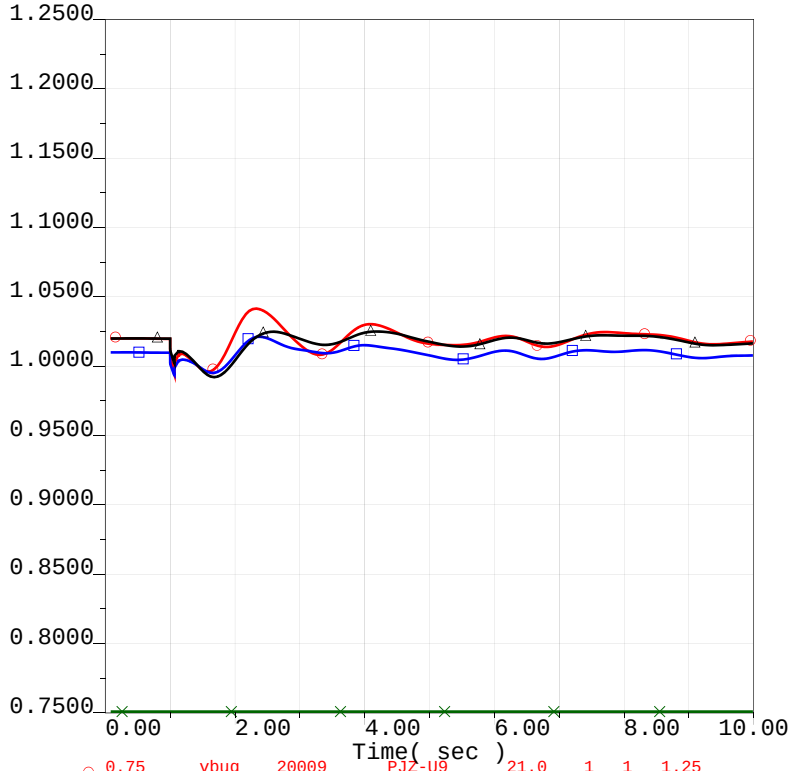
FBus Readings



○ 59.4	fbus	15021	PALOVRDE	500.0	1	1	60.6
× 59.4	fbus	22360	IMPRLVLY	500.0	1	1	60.6
□ 59.4	fbus	8311	COACHELA	230.0	1	1	60.6
△ 59.4	fbus	24801	DEVERS	500.0	1	1	60.6

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case Rev 5 Base Case

CFE Busses Page 1

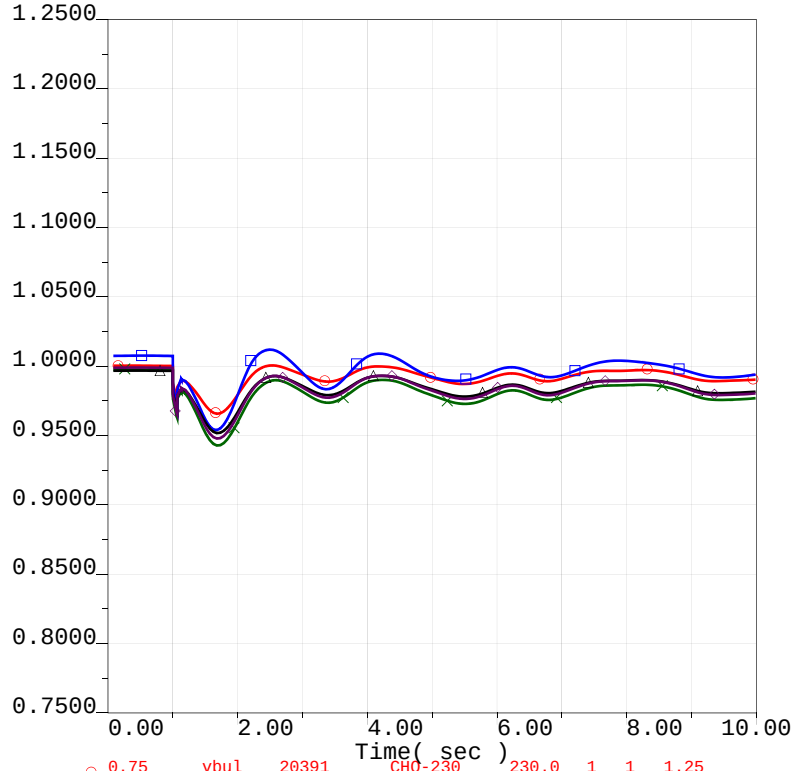


○ 0.75	vbug	20009	PJZ-U9	21.0	1	1	1.25
× 0.75	vbug	20002	PJZ-U1	13.8	1	1	1.25
□ 0.75	vbug	20105	CPD-U1	13.8	1	1	1.25
△ 0.75	vbug	20137	CPU-U1	13.8	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case Rev 5 Base Case

la_pvdv_base | Fri Jun 10 13:46:35 2005

CFE Busses Page 2

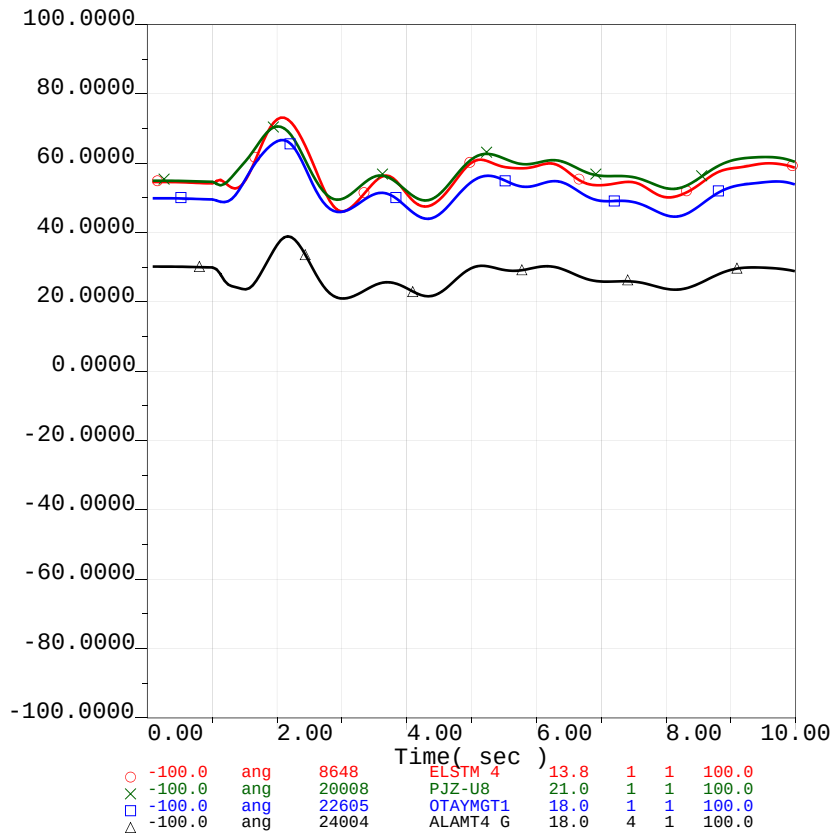


○ 0.75	vbul	20391	CHQ-230	230.0	1	1	1.25
× 0.75	vbus	20118	ROA-230	230.0	1	1	1.25
□ 0.75	vbus	20149	TJI-230	230.0	1	1	1.25
△ 0.75	vbul	20115	MXI-230	230.0	1	1	1.25
◇ 0.75	vbus	20328	LRP-230	230.0	1	1	1.25

IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case Rev 5 Base Case

la_pvdv_base | Fri Jun 10 13:46:36 2005

Rotor Angles for Gen Busses



IVSG STUDY
Light Autumn Case
N-2 MIDPOINTS - DEVERS 1&2 500 kV
Case Rev 5 Base Case

Imperial Valley Study Group

Appendix C.2

Switch Decks

	Power Flow Case and Associated Switch Decks				
Contingency	**HS_ALT2_S1**	**HS_ALT3b_S1**	**LA_ALT2_S1**	**LA_ALT2a_S1**	**LA_ALT3b_S1**
NERC/WECC Planning Standard - Category B (Loss of Single Element)					
IMPERIAL VALLEY-MIGUEL 500kV	ivml_noras	ivml_noras3	laivml_noras2	laivml_noras2a	laivml_noras3
HASSAYAMPA-NORTH GILA 500 kV	hang	hang3	lahang2	lahang2a	lahang3
DEVERS-MIDPOINT 500kV	NA	NA	lademp2	lademp2a	lademp3
SERVAL-VALLEY 500kV	NA	seva	NA	NA	laseva3
SERRANO-SERVAL 500kV	NA	sesv3	NA	NA	lasesv3
SERRANO-VALLEY 500kV	seva1	NA	laseva2	laseva2a	NA
DEVERS-VALLEY 500kV	deva	deva3	ladeva2	ladeva2a	ladeva3
SAN FELIPE-CENTRAL/NORTH SD 500 kV	nsfc	nsfn	lansfc2	lansfc2a	lansfn3b
IMPERIAL VALLEY-SAN FELIPE 500 kV	NA	NA	lansfi2	NA	lansfi3b
BANNISTER-SAN FELIPE 230kV	NA	NA	lansfb2	lansfb2a	lansfb3b
NERC/WECC Planning Standard - Category C (Loss of Two or More Elements)					
COACHELLA-DEVERS/MIRAGE 230kV N-2	NA	NA	lap42_noras2	lap42_noras2a	lap42_noras3b

Imperial Valley Study Group

Appendix C.2.1

Heavy Summer

Heavy Summer Switch Decks

Imperial Valley-Miguel 500kV

(ivml_noras.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt2d1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip Imperial Valley - Miguel 500 kV No RAS
  Case ALT 2 DISPATCH 1

RUN 9
*
*   Imperial Valley - Miguel 500kV Line Out
*   followed by automatic SPS 6.1 to open IV Generation
*   followed by automatic SPS 6.2 to open IV-ROA (CFE)
*   3-phase 4 cycle fault at Imperial Valley
*
*   Fault bus at Imperial Valley
*
FB  0.0  "IMPRLVLY" 500.
*
*   Flash SWPL capacitors
*
FC  0.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC  0.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC  0.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
*
*   Clear fault bus at Imperial Valley
*
CFB 4.0  "IMPRLVLY" 500.
*
*   Trip Imperial Valley - Miguel line
*
DL  4.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 "
*
*   Reinsert remaining SWPL capacitors
*
RC  4.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC  4.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
*
*   SDG&E SPS TMC1505 6.1 SPS B
*   (assume reduntant scheme in CFE operates in 2 sec)
*   Trip IV Generation
*
*TG  4.0  "INTBST   "  18. "1 "
*TG  4.0  "INTBCT   "  16. "1 "
*TG  4.0  "IV GEN1  "  21. "1 "
*TG  4.0  "IV GEN2  "  18. "1 "
*TG  4.0  "IV GEN3  "  18. "1 "
*
*   SDG&E SPS TMC1505 6.2
*   (assumes ROA-HRD or ROA-RUM over 388 MVA operates in 2 sec)
*   Trip Imperial - La Rosita line
*
*DL  124.  "IMPRLVLY" 230. "ROA-230 " 230. "1"
```

(ivml_noras3.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt3Bd1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip Imperial Valley - Miguel 500 kV No RAS
  Case ALT 3B DISPATCH 1

RUN 9
*
*   Imperial Valley - Miguel 500kV Line Out
*   followed by automatic SPS 6.1 to open IV Generation
*   followed by automatic SPS 6.2 to open IV-ROA (CFE)
*   3-phase 4 cycle fault at Imperial Valley
*
*   Fault bus at Imperial Valley
*
FB  0.0  "IMPRLVLY" 500.
*
*   Flash SWPL capacitors
*
FC  0.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC  0.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC  0.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
*
*   Clear fault bus at Imperial Valley
*
CFB 4.0  "IMPRLVLY" 500.
*
*   Trip Imperial Valley - Miguel line
*
DL  4.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 "
*
*   Reinsert remaining SWPL capacitors
*
RC  4.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC  4.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
*
*   SDG&E SPS TMC1505 6.1 SPS B
*   (assume reduntant scheme in CFE operates in 2 sec)
*   Trip IV Generation
*
*TG  4.0  "INTBST   "  18. "1 "
*TG  4.0  "INTBCT   "  16. "1 "
*TG  4.0  "IV GEN1  "  21. "1 "
*TG  4.0  "IV GEN2  "  18. "1 "
*TG  4.0  "IV GEN3  "  18. "1 "
*
*   SDG&E SPS TMC1505 6.2
*   (assumes ROA-HRD or ROA-RUM over 388 MVA operates in 2 sec)
*   Trip Imperial - La Rosita line
*
*DL  124.  "IMPRLVLY" 230. "ROA-230 " 230. "1"
*
```

Hassayampa-N.Gila 500kV

(hang.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt2d1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip Hassayampa - N. Gila 500 kV
  Case ALT 2 DISPATCH 1

RUN 9
*   Loss of Hassayampa - N. Gila 500 kV Line
*
*  CC cards for post-transient only
*
*   Fault bus at Hassayampa
*
FB   0.0 "HASSYAMP" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 4
FC   0.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 4
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Clear fault at Hassayampa
*
CFB  4.0 "HASSYAMP" 500.
*
*   Trip Hassyampa - N. Gila 500 kV Line
*
DL   4.0 "HASSYAMP" 500. "N.GILA   " 500. "1 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 2
RC   4.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 4
RC   4.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 2
RC   4.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 4
*RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
*
```

(hang3.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt3Bd1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip Hassayampa - N. Gila 500 kV
  Case ALT 3B DISPATCH 1

RUN 9
*   Loss of Hassayampa - N. Gila 500 kV Line
*
*  CC cards for post-transient only
*
*   Fault bus at Hassayampa
*
FB   0.0 "HASSYAMP" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 4
FC   0.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 4
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Clear fault at Hassayampa
*
CFB  4.0 "HASSYAMP" 500.
*
```

```
*   Trip Hassyampa - N. Gila 500 kV Line
*
DL   4.0 "HASSYAMP" 500. "N.GILA   " 500. "1 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 2
RC   4.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 4
RC   4.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 2
RC   4.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 4
*RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
*
```

Serval-Valley 500kV

(seva.swt)

```
D:\PSLF\IVGS\CASES\stabcases\ivsg_hs_alt2d1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip SerVal - Valley 500 kV
  Case ALT 2 DISPATCH 1

RUN 9
*
*   SerVal - Valley 500 kV Line Out
*   3 phase 4 cycles fault at SerVal 500 kV
*
*
*   Fault bus at SerVal 500 kV
*
FB   0.0 "SERVAL  " 500.
*
*   Clear fault at SerVal
*
CFB  4.0 "SERVAL  " 500.
*
*   Trip SerVal - Valley 500 kV Line
*
DL   4.0 "SERVAL  " 500. "VALLEYSC" 500. "1 "
*
```

Serrano-SerVal 500kV

(sesv3.swt)

```
D:\PSLF\IVGS\CASES\stabcases\ivsg_hs_alt3Bd1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip Serrano - SerVal 500 kV
  Case ALT 3b DISPATCH 1

RUN 9
*
*   SERRANO-SERVAL 500 kV Line Out
*   3 phase 4 cycles fault at SerVal 500 kV
*
*
*   Fault bus at SerVal 500 kV
*
FB   0.0 "SERRANO  " 500.
*
*   Clear fault at SerVal
*
CFB  4.0 "SERRANO  " 500.
*
*   Trip SerVal - Valley 500 kV Line
*
DL   4.0 "SERRANO  " 500. "SERVAL" 500. "1 "
```

Serrano-Valley 500kV

(seva1.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt2d1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip Serrano - Valley 500 kV Line
  Case Alt 2 Dispatch 1

RUN 9
*
*   Serrano - Valley 500 kV Line Out
*   3 phase 4 cycles fault at Serrano 500 kV
*
*
*   Fault bus at Serrano 500 kV
*
FB   0.0 "SERRANO " 500.
*
*   Clear fault at Serrano
*
CFB  4.0 "SERRANO " 500.
*
*   Trip Serrano - Valley 500 kV Line
*
DL   4.0 "SERRANO " 500. "VALLEYSC" 500. "1 "
*
```

Devers-Valley 500kV

(deva.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt2d1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip Devers - Valley 500 kV
  Case ALT 2 DISPATCH 1

RUN 9
*
*   Loss of Devers - Valley 500 kV Line
*
*
*   Fault bus at Devers
*
FB   0.0 "DEVERS  " 500.
*
*   Clear fault at Devers
*
CFB  4.0 "DEVERS   " 500.
*
*   Trip Devers - Valley 500 kV Line
*
DL   4.0 "DEVERS  " 500. "VALLEYSC" 500. "1 "
*
```

(deva3.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt3Bd1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip Devers - Valley 500 kV
  Case ALT 3B DISPATCH 1

RUN 9
*
*   Loss of Devers - Valley 500 kV Line
*
*
*   Fault bus at Devers
*
FB   0.0 "DEVERS  " 500.
*
*   Clear fault at Devers
*
CFB  4.0 "DEVERS   " 500.
*
*   Trip Devers - Valley 500 kV Line
*
DL   4.0 "DEVERS  " 500. "VALLEYSC" 500. "1 "
*
```

New San Felipe-Central 500kV

(nsfc.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt2d1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip NEW SAN FELIPE - CENTRAL 500 kV
  Case ALT 2 DISPATCH 1

RUN 9
*
*   Loss of NEW SAN FELIPE CENTRAL 500 kV Line
*
*
*   Fault bus at New San Felipe
*
FB   0.0 "NEWSF500  " 500.
*
*   Flash capacitors
*
FC  0.0  "CENTRALX" 500. "NEWSF500" 500. "1 " 2
*
*   Clear fault at New San Felipe
*
CFB  4.0 "NEWSF500   " 500.
*
*   Trip New San Felipe - Central 500 kV Line
*
DL   4.0 "CENTRALX" 500. "NEWSF500" 500. "1 "
```

New San Felipe-NorthSD 500kV

(nsfn.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt3Bd1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  Trip NEW SAN FELIPE - NORTHSD 500 kV
  Case ALT 3B DISPATCH 1

RUN 9
*
*   Loss of NEW SAN FELIPE NORTHSD 500 kV Line
*
*
*   Fault bus at New San Felipe
*
FB   0.0 "NEWSF500  " 500.
*
*   Flash capacitors
*
FC  0.0  "NORTHSD" 500. "NEWSF500" 500. "1 " 2
*
*   Clear fault at New San Felipe
*
CFB  4.0 "NEWSF500   " 500.
*
*   Trip New San Felipe - Central 500 kV Line
*
DL   4.0 "NORTHSD" 500. "NEWSF500" 500. "1 "
```

PV-DV/HARQ-DV 500kV N-2

(pvdv2i.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt2d1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  N-2  PV-Devers HARQ-DEVERS 500 kV
  Case ALT 2 DISPATCH 1

RUN 9
*   Loss of Palo Verde - Devers 1 & 2
*
*  CC cards for post-transient only
*
*   Fault bus at Palo Verde
*
FB   0.0 "DEVERS" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 4
FC   0.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 4
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
FC   0.0 "NAVAJO  " 500. "RACEWAY " 500. "1 " 2
*
*   Clear fault at PV AND HARQ
*
CFB  4.0 "DEVERS" 500.
*
*   Trip Palo Verde - Devers 500 kV Line
*   Trip Haquahala  - Devers 500 kV Line
*
DL   4.0 "PALOVRDE" 500. "DEVERS   " 500. "1 "
DL   4.0 "HARQUAHA" 500. "DEVERS   " 500. "1 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
* RC   4.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 2
```

```
* RC   4.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 4
* RC   4.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 2
* RC   4.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 4
RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
RC   8.0 "NAVAJO  " 500. "RACEWAY " 500. "1 " 2
*
```

(pvdv3b.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_hs_alt3Bd1_S1.sav
d:\pslf\ivgs\dyd\14hs_ivgs_pst.dyd
TIT
  IVSG STUDY
  2014 Heavy Summer Case
  N-2  PV-Devers HARQ-DEVERS 500 kV
  Case ALT 3B DISPATCH 1

RUN 9
*   Loss of Palo Verde - Devers 1 & 2
*
*  CC cards for post-transient only
*
*   Fault bus at Palo Verde
*
FB   0.0 "DEVERS" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 4
FC   0.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 4
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
FC   0.0 "NAVAJO  " 500. "RACEWAY " 500. "1 " 2
*
*   Clear fault at PV AND HARQ
*
CFB  4.0 "DEVERS" 500.
*
*   Trip Palo Verde - Devers 500 kV Line
*   Trip Haquahala  - Devers 500 kV Line
*
DL   4.0 "PALOVRDE" 500. "DEVERS   " 500. "1 "
DL   4.0 "HARQUAHA" 500. "DEVERS   " 500. "1 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
* RC   4.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 2
* RC   4.0 "PALOVRDE" 500. "DEVERS  " 500. "1 " 4
* RC   4.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 2
* RC   4.0 "HARQUAHA" 500. "DEVERS  " 500. "1 " 4
RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
RC   8.0 "NAVAJO  " 500. "RACEWAY " 500. "1 " 2
*
```

Imperial Valley Study Group

Appendix C.2.2

Light Autumn

Light Autumn Switch Decks

Imperial Valley-Miguel 500kV

(laivml_noras2.swt)

```
D:\PSLF\IVGS\CASES\autumn\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Imperial Valley - Miguel 500 kV No RAS
  Case ALT 2 DISPATCH 3

RUN 9
*
*   Imperial Valley - Miguel 500kV Line Out
*   followed by automatic SPS 6.1 to open IV Generation
*   followed by automatic SPS 6.2 to open IV-ROA (CFE)
*   3-phase 4 cycle fault at Imperial Valley
*
*   Fault bus at Imperial Valley
*
FB  0.0  "IMPRLVLY" 500.
*
*   Flash SWPL capacitors
*
FC  0.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC  0.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC  0.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
*
*   Clear fault bus at Imperial Valley
*
CFB 4.0  "IMPRLVLY" 500.
*
*   Trip Imperial Valley - Miguel line
*
DL  4.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 "
*
*   Reinsert remaining SWPL capacitors
*
RC  4.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC  4.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
*
*   SDG&E SPS TMC1505 6.1 SPS B
*   (assume reduntant scheme in CFE operates in 2 sec)
*   Trip IV Generation
*
*TG  4.0  "INTBST   "  18. "1 "
*TG  4.0  "INTBCT   "  16. "1 "
*TG  4.0  "IV GEN1  "  21. "1 "
*TG  4.0  "IV GEN2  "  18. "1 "
*TG  4.0  "IV GEN3  "  18. "1 "
*
*   SDG&E SPS TMC1505 6.2
*   (assumes ROA-HRD or ROA-RUM over 388 MVA operates in 2 sec)
*   Trip Imperial - La Rosita line
*
*DL  124.  "IMPRLVLY" 230. "ROA-230 " 230. "1"
```

(laivml_noras2a.swt)

```
D:\PSLF\IVGS\CASES\autumn\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Imperial Valley - Miguel 500 kV No RAS
  Case ALT 2a DISPATCH 3

RUN 9
*
*   Imperial Valley - Miguel 500kV Line Out
*   followed by automatic SPS 6.1 to open IV Generation
*   followed by automatic SPS 6.2 to open IV-ROA (CFE)
*   3-phase 4 cycle fault at Imperial Valley
*
*   Fault bus at Imperial Valley
*
FB  0.0  "IMPRLVLY" 500.
*
*   Flash SWPL capacitors
*
FC  0.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC  0.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC  0.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
*
*   Clear fault bus at Imperial Valley
*
CFB 4.0  "IMPRLVLY" 500.
*
*   Trip Imperial Valley - Miguel line
*
DL  4.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 "
*
*   Reinsert remaining SWPL capacitors
*
RC  4.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC  4.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
*
*   SDG&E SPS TMC1505 6.1 SPS B
*   (assume reduntant scheme in CFE operates in 2 sec)
*   Trip IV Generation
*
*TG  4.0  "INTBST   "  18. "1 "
*TG  4.0  "INTBCT   "  16. "1 "
*TG  4.0  "IV GEN1  "  21. "1 "
*TG  4.0  "IV GEN2  "  18. "1 "
*TG  4.0  "IV GEN3  "  18. "1 "
*
*   SDG&E SPS TMC1505 6.2
*   (assumes ROA-HRD or ROA-RUM over 388 MVA operates in 2 sec)
*   Trip Imperial - La Rosita line
*
*DL  124.  "IMPRLVLY" 230. "ROA-230 " 230. "1"
*
```

(laivml_noras3b.swt)

```
D:\PSLF\IVGS\CASES\autumn\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Imperial Valley - Miguel 500 kV No RAS
  Case ALT 3b DISPATCH 3

RUN 9
*
*   Imperial Valley - Miguel 500kV Line Out
*   followed by automatic SPS 6.1 to open IV Generation
*   followed by automatic SPS 6.2 to open IV-ROA (CFE)
*   3-phase 4 cycle fault at Imperial Valley
*
*   Fault bus at Imperial Valley
*
FB  0.0  "IMPRLVLY" 500.
*
*   Flash SWPL capacitors
*
FC  0.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC  0.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC  0.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
*
*   Clear fault bus at Imperial Valley
*
CFB 4.0  "IMPRLVLY" 500.
*
*   Trip Imperial Valley - Miguel line
*
DL  4.0  "IMPRLVLY" 500. "MIGUEL  " 500. "1 "
*
*   Reinsert remaining SWPL capacitors
*
RC  4.0  "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC  4.0  "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
*
*   SDG&E SPS TMC1505 6.1 SPS B
*   (assume reduntant scheme in CFE operates in 2 sec)
*   Trip IV Generation
*
*TG  4.0  "INTBST   "  18. "1 "
*TG  4.0  "INTBCT   "  16. "1 "
*TG  4.0  "IV GEN1  "  21. "1 "
*TG  4.0  "IV GEN2  "  18. "1 "
*TG  4.0  "IV GEN3  "  18. "1 "
*
*   SDG&E SPS TMC1505 6.2
*   (assumes ROA-HRD or ROA-RUM over 388 MVA operates in 2 sec)
*   Trip Imperial - La Rosita line
*
*DL  124.  "IMPRLVLY" 230. "ROA-230 " 230. "1"
*
```

Hassayampa-N.Gila 500kV

(lahang2.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Hassayampa - N. Gila 500 kV
  Case ALT 2 DISPATCH 3

RUN 9
*   Loss of Hassayampa - N. Gila 500 kV Line
*
*  CC cards for post-transient only
*
*   Fault bus at Hassayampa
*
FB   0.0 "HASSYAMP" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "MIDPINTS" 500. "PALOVRDE" 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
FC   0.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Clear fault at Hassayampa
*
CFB  4.0 "HASSYAMP" 500.
*
*   Trip Hassyampa - N. Gila 500 kV Line
*
DL   4.0 "HASSYAMP" 500. "N.GILA   " 500. "1 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "MIDPINTS" 500. "PALOVRDE" 500. "1 " 2
RC   4.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
```

```
RC   4.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
RC   4.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
*RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
*
```

(lahang2a.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2Ad3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Hassayampa - N. Gila 500 kV
  Case ALT 2A DISPATCH 3

RUN 9
*   Loss of Hassayampa - N. Gila 500 kV Line
*
*  CC cards for post-transient only
*
*   Fault bus at Hassayampa
*
FB   0.0 "HASSYAMP" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "MIDPINTS" 500. "PALOVRDE" 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
FC   0.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Clear fault at Hassayampa
*
CFB  4.0 "HASSYAMP" 500.
*
*   Trip Hassyampa - N. Gila 500 kV Line
*
DL   4.0 "HASSYAMP" 500. "N.GILA   " 500. "1 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "MIDPINTS" 500. "PALOVRDE" 500. "1 " 2
RC   4.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
RC   4.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
RC   4.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
*RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
*
```

(lahang3b.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt3Bd3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Hassayampa - N. Gila 500 kV
  Case ALT 3B DISPATCH 3

RUN 9
*   Loss of Hassayampa - N. Gila 500 kV Line
*
*  CC cards for post-transient only
*
*   Fault bus at Hassayampa
*
FB   0.0 "HASSYAMP" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "MIDPINTS" 500. "PALOVRDE" 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
FC   0.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
```

```
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Clear fault at Hassayampa
*
CFB  4.0 "HASSYAMP" 500.
*
*   Trip Hassyampa - N. Gila 500 kV Line
*
DL   4.0 "HASSYAMP" 500. "N.GILA   " 500. "1 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "MIDPINTS" 500. "PALOVRDE" 500. "1 " 2
RC   4.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
RC   4.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
RC   4.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
*RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 1
*RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 3
*
```

Midpoints-Devers 500kV

(lampde2.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip MIDPINTS - DEVERS 500 kV
  Case ALT 2 DISPATCH 3

RUN 9
*
*   Loss of MIDPINTS-DEVERS 500 kV Line
*
*
*   Fault bus at MIDPINTS
*
FB   0.0 "MIDPINTS  " 500.
*
*   Flash capacitors
*
FC  0.0  "MIDPINTS" 500. "DEVERS" 500. "1 " 2
*
*   Clear fault at MIDPINTS
*
CFB  4.0 "MIDPINTS  " 500.
*
*   Trip MIDPINTS-DEVERS 500 kV Line
*
DL   4.0 "MIDPINTS" 500. "DEVERS" 500. "1 "
*
```

(lampde2a.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2ad3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip MIDPINTS - DEVERS 500 kV
  Case ALT 2a DISPATCH 3

RUN 9
*
*   Loss of MIDPINTS-DEVERS 500 kV Line
*
*
*   Fault bus at MIDPINTS
*
FB   0.0 "MIDPINTS  " 500.
*
*   Flash capacitors
*
FC  0.0  "MIDPINTS" 500. "DEVERS" 500. "1 " 2
*
*   Clear fault at MIDPINTS
*
CFB  4.0 "MIDPINTS  " 500.
*
*   Trip MIDPINTS-DEVERS 500 kV Line
```

```
*
DL   4.0 "MIDPINTS" 500. "DEVERS" 500. "1 "
```

(lampde3b.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt3Bd3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip MIDPINTS - DEVERS 500 kV
  Case ALT 3B DISPATCH 3

RUN 9
*
*   Loss of MIDPINTS-DEVERS 500 kV Line
*
*
*   Fault bus at MIDPINTS
*
FB   0.0 "MIDPINTS  " 500.
*
*   Flash capacitors
*
FC  0.0  "MIDPINTS" 500. "DEVERS" 500. "1 " 2
*
*   Clear fault at MIDPINTS
*
CFB  4.0 "MIDPINTS  " 500.
*
*   Trip MIDPINTS-DEVERS 500 kV Line
*
DL   4.0 "MIDPINTS" 500. "DEVERS" 500. "1 "
*
```

SerVal-Valley 500kV

(laseva3.swt)

```
D:\PSLF\IVGS\CASES\stabcases\ivsg_la_alt3bd3_s1.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip SerVal - Valley 500 kV
  Case ALT 3b DISPATCH 3

RUN 9
*
*   SerVal - Valley 500 kV Line Out
*   3 phase 4 cycles fault at SerVal 500 kV
*
*
*   Fault bus at SerVal 500 kV
*
FB   0.0 "SERVAL  " 500.
*
*   Clear fault at SerVal
*
CFB  4.0 "SERVAL  " 500.
*
*   Trip SerVal - Valley 500 kV Line
*
DL   4.0 "SERVAL  " 500. "VALLEYSC" 500. "1 "
*
```

Serrano-SerVal 500kV

(lasesv3.swt)

```
D:\PSLF\IVGS\CASES\stabcases\ivsg_la_alt3bd3_s1.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Serrano - SerVal 500 kV
  Case ALT 3b DISPATCH 3

RUN 9
*
*   SerVal - Valley 500 kV Line Out
*   3 phase 4 cycles fault at SerVal 500 kV
*
*
*   Fault bus at SerVal 500 kV
*
FB   0.0 "SERRANO  " 500.
*
*   Clear fault at SerVal
*
CFB  4.0 "SERRANO  " 500.
*
*   Trip SerVal - Valley 500 kV Line
*
DL   4.0 "SERRANO  " 500. "SERVAL" 500. "1 "
*
```

Devers-Valley 500kV

(ladeva2.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Devers - Valley 500 kV
  Case ALT 2 DISPATCH 3

RUN 9
*
*   Loss of Devers - Valley 500 kV Line
*
*
*   Fault bus at Devers
*
FB   0.0 "DEVERS  " 500.
*
*   Clear fault at Devers
*
CFB  4.0 "DEVERS   " 500.
*
*   Trip Devers - Valley 500 kV Line
*
DL   4.0 "DEVERS  " 500. "VALLEYSC" 500. "1 "
*
```

(ladeva2a.swt)

```
D:\PSLF\IVGS\CASES\stabcases\ivsg_la_alt2ad3_s1.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip Devers - Valley 500 kV
  Case ALT 2a DISPATCH 3

RUN 9
*
*   Loss of Devers - Valley 500 kV Line
*
*
*   Fault bus at Devers
*
FB   0.0 "DEVERS  " 500.
*
*   Clear fault at Devers
*
CFB  4.0 "DEVERS   " 500.
*
*   Trip Devers - Valley 500 kV Line
*
DL   4.0 "DEVERS  " 500. "VALLEYSC" 500. "1 "
*
```

(ladeva3.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt3Bd3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
```

```
  Light Autumn Case
  Trip Devers - Valley 500 kV
  Case ALT 3B DISPATCH 3

RUN 9
*
*   Loss of Devers - Valley 500 kV Line
*
*
*   Fault bus at Devers
*
FB   0.0 "DEVERS  " 500.
*
*   Clear fault at Devers
*
CFB  4.0 "DEVERS   " 500.
*
*   Trip Devers - Valley 500 kV Line
*
DL   4.0 "DEVERS  " 500. "VALLEYSC" 500. "1 "
*
```

New San Felipe-Central 500kV

(lansfc2.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip NEW SAN FELIPE - CENTRAL 500 kV
  Case ALT 2 DISPATCH 3

RUN 9
*
*   Loss of NEW SAN FELIPE CENTRAL 500 kV Line
*
*
*   Fault bus at New San Felipe
*
FB   0.0 "NEWSF500  " 500.
*
*   Flash capacitors
*
FC  0.0  "CENTRALX" 500. "NEWSF500" 500. "1 " 2
*
*   Clear fault at New San Felipe
*
CFB  4.0 "NEWSF500   " 500.
*
*   Trip New San Felipe - Central 500 kV Line
*
DL   4.0 "CENTRALX" 500. "NEWSF500" 500. "1 "
```

(lansfc2a.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2ad3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip NEW SAN FELIPE - CENTRAL 500 kV
  Case ALT 2a DISPATCH 3

RUN 9
*
*   Loss of NEW SAN FELIPE CENTRAL 500 kV Line
*
*   Fault bus at New San Felipe
*
FB   0.0 "NEWSF500  " 500.
*
*   Flash capacitors
*
FC  0.0  "CENTRALX" 500. "NEWSF500" 500. "1 " 2
*
*   Clear fault at New San Felipe
*
CFB  4.0 "NEWSF500   " 500.
*
*   Trip New San Felipe - Central 500 kV Line
*
DL   4.0 "CENTRALX" 500. "NEWSF500" 500. "1 "
```

New San Felipe-NorthSD 500kV

(lansfn3b.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt3Bd3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip NEW SAN FELIPE - NORTHSD 500 kV
  Case ALT 3B DISPATCH 3

RUN 9
*
*   Loss of NEW SAN FELIPE NORTHSD 500 kV Line
*
*
*   Fault bus at New San Felipe
*
FB   0.0 "NEWSF500  " 500.
*
*   Flash capacitors
*
FC  0.0  "NORTHSD" 500. "NEWSF500" 500. "1 " 2
*
*   Clear fault at New San Felipe
*
CFB  4.0 "NEWSF500   " 500.
*
*   Trip New San Felipe - Central 500 kV Line
*
DL   4.0 "NORTHSD" 500. "NEWSF500" 500. "1 "
*
```

New San Felipe-Imperial Valley 500kV

(lansfi2.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
  Case ALT 2 DISPATCH 3

RUN 9
*
*   Loss of NEWSF-IMPRLVLY 500 kV Line
*
*
*   Fault bus at NEW SAN FELIPE
*
FB   0.0 "NEWSF500  " 500.
*
*   Clear fault at NEWSF500
*
CFB  4.0 "NEWSF500  " 500.
*
*   Trip NEWSF500-IMPRLVLY 500 kV Line
*
DL   4.0 "NEWSF500" 500. "IMPRLVLY" 500. "1 "
*
```

(lansfi3b.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt3Bd3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip NEW SAN FELIPE - IMPERIAL VALLEY 500 kV
  Case ALT 3B DISPATCH 3

RUN 9
*
*   Loss of NEWSF-IMPRLVLY 500 kV Line
*
*
*   Fault bus at NEW SAN FELIPE
*
FB   0.0 "NEWSF500  " 500.
*
*   Clear fault at NEWSF500
*
CFB  4.0 "NEWSF500  " 500.
*
*   Trip NEWSF500-IMPRLVLY 500 kV Line
*
DL   4.0 "NEWSF500" 500. "IMPRLVLY" 500. "1 "
*
```

New San Felipe-Banister 230kV

(lansfb2.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip BANISTER - NEW SAN FELIPE 230 kV
  Case ALT 2 DISPATCH 3

RUN 9
*
*   Loss of BANISTER-NEWSF230 230 kV Line
*
*
*   Fault bus at NEW SAN FELIPE
*
FB   0.0 "NEWSF230  " 230.
*
*   Clear fault at NEWSF230
*
CFB  4.0 "NEWSF230  " 230.
*
*   Trip BANISTER-NEWSF230 230 kV Line
*
DL   4.0 "BANIS230" 230. "NEWSF230" 230. "1 "
*
```

(lansfb2a.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2Ad3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip BANISTER - NEW SAN FELIPE 230 kV
  Case ALT 2A DISPATCH 3

RUN 9
*
*   Loss of BANISTER-NEWSF230 230 kV Line
*
*
*   Fault bus at NEW SAN FELIPE
*
FB   0.0 "NEWSF230  " 230.
*
*   Clear fault at NEWSF230
*
CFB  4.0 "NEWSF230  " 230.
*
*   Trip BANISTER-NEWSF230 230 kV Line
*
DL   4.0 "BANIS230" 230. "NEWSF230" 230. "1 "
*
```

(lansfb3b.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt3Bd3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip BANISTER - NEW SAN FELIPE 230 kV
  Case ALT 3B DISPATCH 3

RUN 9
*
*   Loss of BANISTER-NEWSF230 230 kV Line
*
*
*   Fault bus at NEW SAN FELIPE
*
FB   0.0 "NEWSF230  " 230.
*
*   Clear fault at NEWSF230
*
CFB  4.0 "NEWSF230  " 230.
*
*   Trip BANISTER-NEWSF230 230 kV Line
*
DL   4.0 "BANIS230" 230. "NEWSF230" 230. "1 "
*
```

Path42 with No RAS

(lap42_noras2.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2d3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip PATH 42
  Case ALT 2 DISPATCH 3

RUN 09
*   ==========================================================================
*
*   Path 42 Line trip without RAS
*
*
*   ==========================================================================
*   Fault Bus - Mirage 230kV
FB  0.0 "MIRAGE" 230.
*
*   Clear Fault
CFB 5 "MIRAGE" 230.
*
*   Trip Path 42 Elements
DL  5  "COACHELA " 230.  "DEVERS " 230.  "1 "
DL  5  "RAMON "    230.  "MIRAGE " 230.  "1 "
*
*   Trip 92kV ties and Generation as part of RAS (approx 200MW)
*DL  8  "MIDWAY "   92.   "VULCAN "  92.  "1 "
*DL  8  "MIDWAY "   92.   "LEATHERS "  92.  "1 "
*TG  8  "VULCAN1 "  14.4 "1 "
*TG  8  "VULCAN1 "  14.4 "2 "
*TG  8  "EARTHE2 "  92 "1 "
*TG  8  "LEATHERS "  14.4 "1 "
*TG  8  "JJELMORE "  14.4 "1 "
*TG  8  "DELRANCH "  14.4 "1 "
```

(lap42_noras2a.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt2ad3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip PATH 42
  Case ALT 2a DISPATCH 3

RUN 09
*   ==========================================================================
*
*   Path 42 Line trip without RAS
*
*
*   ==========================================================================
*   Fault Bus - Mirage 230kV
FB  0.0 "MIRAGE" 230.
*
*   Clear Fault
CFB 5 "MIRAGE" 230.
*
*   Trip Path 42 Elements
DL  5  "COACHELA " 230.  "DEVERS " 230.  "1 "
DL  5  "RAMON "    230.  "MIRAGE " 230.  "1 "
*
*   Trip 92kV ties and Generation as part of RAS (approx 200MW)
*DL  8  "MIDWAY "   92.   "VULCAN "  92.  "1 "
*DL  8  "MIDWAY "   92.   "LEATHERS "  92.  "1 "
*TG  8  "VULCAN1 "  14.4 "1 "
*TG  8  "VULCAN1 "  14.4 "2 "
*TG  8  "EARTHE2 "  92 "1 "
*TG  8  "LEATHERS "  14.4 "1 "
*TG  8  "JJELMORE "  14.4 "1 "
*TG  8  "DELRANCH "  14.4 "1 "
```

(lap42_noras3b.swt)

```
D:\PSLF\IVGS\CASES\AUTUMN\ivsg_la_alt3Bd3.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  Trip PATH 42
  Case ALT 3B DISPATCH 3

RUN 09
*   ==========================================================================
*
*   Path 42 Line trip without RAS
*
*
*   ==========================================================================
*   Fault Bus - Mirage 230kV
FB  0.0 "MIRAGE" 230.
*
*   Clear Fault
CFB 5 "MIRAGE" 230.
*
*   Trip Path 42 Elements
DL  5  "COACHELA " 230.  "DEVERS " 230.  "1 "
DL  5  "RAMON "    230.  "MIRAGE " 230.  "1 "
*
*   Trip 92kV ties and Generation as part of RAS (approx 200MW)
*DL  8  "MIDWAY "   92.   "VULCAN "  92.  "1 "
*DL  8  "MIDWAY "   92.   "LEATHERS "  92.  "1 "
*TG  8  "VULCAN1 "  14.4 "1 "
*TG  8  "VULCAN1 "  14.4 "2 "
*TG  8  "EARTHE2 "  92 "1 "
*TG  8  "LEATHERS "  14.4 "1 "
*TG  8  "JJELMORE "  14.4 "1 "
*TG  8  "DELRANCH "  14.4 "1 "
```

Midpoints-Devers 1&2 500kV N-2

(lapvdv2i.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_la_alt2d3_s1.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  N-2  MIDPOINTS - DEVERS 1&2 500 kV
  Case ALT 2 DISPATCH 3

RUN 9
*   Loss of MIDPOINTS-DEVERS 1 & 2
*
*
*   Fault bus at DEVERS
*
FB   0.0 "DEVERS" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "PALOVRDE" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 2
*
*   Clear fault at DEVERS
*
CFB  4.0 "DEVERS" 500.
*
*   Trip MIDPOINTS - Devers 500 kV Line
*
DL   4.0 "MIDPINTS" 500. "DEVERS   " 500. "1 "
DL   4.0 "MIDPINTS" 500. "DEVERS   " 500. "2 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "PALOVRDE" 500. "MIDPINTS" 500. "1 " 2
RC   4.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 2
*
```

(lapvdv2a.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_la_alt2Ad3_s1.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  N-2  MIDPOINTS - DEVERS 1 INDIAN HILLS - DEVERS 500 kV
  Case ALT 2A DISPATCH 3

RUN 9
*   Loss of MIDPOINTS-DEVERS 1 AND INDIAN HILLS - DEVERS
*
*
*   Fault bus at DEVERS
*
FB   0.0 "DEVERS" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "PALOVRDE" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 2
*
*   Clear fault at DEVERS
*
CFB  4.0 "DEVERS" 500.
*
*   Trip MIDPOINTS - Devers 500 kV Line
*
DL   4.0 "MIDPINTS" 500. "DEVERS   " 500. "1 "
DL   4.0 "IH500   " 500. "DEVERS   " 500. "1 "
*
```

```
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "PALOVRDE" 500. "MIDPINTS" 500. "1 " 2
RC   4.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 2
*
```

(lapvdv3b.swt)

```
D:\PSLF\IVGS\CASES\STABCASES\ivsg_la_alt3Bd3_s1.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  N-2  MIDPOINTS - DEVERS 1&2 500 kV
  Case ALT 3B DISPATCH 3

RUN 9
*   Loss of MIDPOINTS-DEVERS 1 & 2
*
*
*   Fault bus at DEVERS
*
FB   0.0 "DEVERS" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "PALOVRDE" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 2
*
*   Clear fault at DEVERS
*
CFB  4.0 "DEVERS" 500.
*
*   Trip MIDPOINTS - Devers 500 kV Line
*
DL   4.0 "MIDPINTS" 500. "DEVERS   " 500. "1 "
DL   4.0 "MIDPINTS" 500. "DEVERS   " 500. "2 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "PALOVRDE" 500. "MIDPINTS" 500. "1 " 2
RC   4.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 2
*
```

(lapvdvbase.swt)

```
d:\PSLF\IVGS\CASES\STABCASES\ivsg_la_rev5.sav
d:\pslf\ivgs\dyd\08la1s1ivsg.dyd
TIT
  IVSG STUDY
  Light Autumn Case
  N-2  MIDPOINTS - DEVERS 1&2 500 kV
  Case Rev 5 Base Case

RUN 9
*   Loss of MIDPOINTS-DEVERS 1 & 2
*
*
*   Fault bus at DEVERS
*
FB   0.0 "DEVERS" 500.
*
*  Apply fault damping to each Palo Verde Unit
*
GFD   0.0 "PALOVRD1" 24. "1 "  0.072485
GFD   0.0 "PALOVRD2" 24. "1 "  0.072485
GFD   0.0 "PALOVRD3" 24. "1 "  0.072485
*
*   Flash series capacitors in following 500 kV Lines
*
FC   0.0 "PALOVRDE" 500. "MIDPINTS" 500. "1 " 2
FC   0.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
```

```
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "1 " 2
FC   0.0 "MIDPINTS" 500. "DEVERS  " 500. "2 " 2
FC   0.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
FC   0.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
FC   0.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
FC   0.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
FC   0.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
FC   0.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
FC   0.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 2
*
*   Clear fault at DEVERS
*
CFB  4.0 "DEVERS" 500.
*
*   Trip MIDPOINTS - Devers 500 kV Line
*
DL   4.0 "MIDPINTS" 500. "DEVERS   " 500. "1 "
DL   4.0 "MIDPINTS" 500. "DEVERS   " 500. "2 "
*
*  Remove fault damping to each Palo Verde Unit
*
GFD   4.0 "PALOVRD1" 24. "1 "  0.0
GFD   4.0 "PALOVRD2" 24. "1 "  0.0
GFD   4.0 "PALOVRD3" 24. "1 "  0.0
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   4.0 "PALOVRDE" 500. "MIDPINTS" 500. "1 " 2
RC   4.0 "HARQUAHA" 500. "MIDPINTS" 500. "1 " 2
RC   4.0 "HASSYAMP" 500. "N.GILA  " 500. "1 " 2
RC   4.0 "N.GILA  " 500. "IMPRLVLY" 500. "1 " 2
RC   4.0 "IMPRLVLY" 500. "MIGUEL  " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 1
RC   4.0 "MEAD    " 500. "PERKINS " 500. "1 " 3
*
*   Reinsert series capacitors in following 500 kV Lines
*
RC   8.0 "MOENKOPI" 500. "YAVAPAI " 500. "1 " 1
RC   8.0 "YAVAPAI " 500. "WESTWING" 500. "1 " 2
RC   8.0 "NAVAJO  " 500. "WESTWING" 500. "1 " 2
*
```