California Independent
System Operator Corporation

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March 31, 2008

Alex Sokoletsky
Vice President
MMC Energy, Inc.
26 Broadway, Suite 960
New York, NY
10004

Subject: MMC Chula Vista Expansion Generation Project
Interconnection Facilities Study Report

Dear Mr. Sokoletsky:

Attached is the Generator Interconnection Facilities Study (IFAS) Report for the MMC Chula Vista Expansion Generation Project (MMC Chula Vista or the Project). The MMC Chula Vista Project has been proposed by the MMC Energy, Inc. Company to remove the existing 44 MW natural gas fired combustion turbine/generator and interconnect two natural gas fired combustion turbine/generators, with a total maximum output of 93 MW, to the CAISO Controlled Grid. The Project will be interconnected to the 69 kV radial transmission line between Otay Substation and Otay generation in Southern San Diego. The proposed in-service date is April 1, 2009 and the commercial operational date of the Project is June 1, 2009. The IFAS was performed by SDG&E under the direction of the CAISO.

Based on the proposed operating date, the Point of Interconnection, and the results of the study, the following Network Upgrades were recommended to safely and reliably interconnect the Project:

A. Replace two 69kV circuit breakers (MG641 and MG642) in Montgomery substation. These are Reliability Network Upgrades that are mandatory.

B. TL6929 (Otay Generation-Otay) – Reset relays to achieve a continuous line rating of 136 MVA required to accommodate the full output of the Project under normal conditions.

C. TL642B (South Bay-Montgomery Tap) – Reset TL642 relays to achieve a continuous line rating of 200 MVA.

D. TL644 (South Bay-Sweetwater) - Reconductor approximately 3800’ of single 1750 kcmil AL cable with bundled 1750 kcmil AL cable between South Bay and Sweetwater substations in order to achieve a continuous line rating of 200 MVA. Replace two (2) existing wood poles with steel cable poles to accommodate additional pole loading. Replace two (2) 69 kV disconnect switches at South Bay substation.

E. TL649A (Otay-Otay Tap) – Reconductor approximately 5330' of single overhead 4/0 CU conductor with 636 ACSS conductor between Otay substation and Otay tap to achieve a continuous line rating of 90 MVA. Replace approximately twenty seven (27) wood poles with twenty three (23) Class H2 and four (4) anchor-bolted steel poles to accommodate additional pole loading. Replace Switch 649-3 to accommodate higher loading. Replace TL649 69 kV circuit breaker and two (2) 69 kV disconnect switches at Otay substation.

F. Monitor TL642 (South Bay-Montgomery Tap-Sweet Water) and TL644 (South Bay-Sweet Water) loading conditions. Install a Special Protection System (SPS) that sequentially trips MMC Chula Vista Expansion generating units when one of these lines is open and the other exhibits loading in excess of 205 MVA.

Total cost of the Network Upgrades described above was estimated as **$8.52 Million** with the estimated time to construct the upgrades as 18 months.

The Interconnection Customer (IC) is responsible for the costs of the the Reliability Network Upgrades (Item A), including the SPS described in Item F. The IC has elected to pay for the Delivery Network Upgrades to accommodate the generation output under normal conditions (Item B), as well as Delivery Network Upgrades described in Item C.. The IC, CAISO and SDG&E agreed that in lieu of reconductoring the South Bay-Sweetwater and Otay-Otay Tap 69 kV transmission lines (Items D and E), two additional SPS can be used to trip the MMC Chula Vista generation if these lines become overloaded. Overloading is expected only under emergency conditions. The IC indicated that they may elect to perform the line reconductoring at a later date. With the SPS used instead of the line reconductoring, the total cost estimate is expected to be $709,000, with the time to construct of 6 months.

Please note that this letter approving the interconnection of the MMC Chula Vista Expansion Project allows the Project to be eligible to deliver the Project's output to the CAISO Controlled Grid using available transmission. However, it does not establish the Project's level of deliverability for purposes of determining its Net Qualifying Capacity under the CAISO Tariff and in accordance with CPUC-adopted Resource Adequacy Rules. To review the results of the deliverability assessment study for the MMC Chula Vista Expansion Project, please reference the website link at: http://www.caiso.com/181c/181c902120c80.html. This letter makes no representation, and MMC Energy cannot rely on any statements herein, regarding the ability, or amount, of the output of the Project to be eligible to sell Resource Adequacy Capacity. We encourage MMC Energy to continue to follow the baseline deliverability studies ongoing at the CAISO. For more information on generation deliverability, please reference the website link provided above.

Should you have any questions regarding the Study, please contact Irina Green at (916) 608-1296 (igreen@caiso.com) or myself at (916) 608-1113 (AChowdhury@caiso.com).

Sincerely,

Ali Asraf Chowdhury
Director of Regional Transmision South

cc:

via e-mail:

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ISO Regional Transmission South

Interconnection Facilities Study

Generation Interconnection

MMC Chula Vista, LLC

MMC Chula Vista Expansion

Final Report

March 31, 2008

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1. Executive Summary

MMC Chula Vista, LLC, the Interconnection Customer (IC), proposes to remove an existing 44 MW natural gas fired combustion turbine/generator and install two natural gas fired combustion turbine/generator sets. The new installation will have a total maximum net output to the CAISO controlled grid of 93 MW. The proposed Commercial Operation Date (COD) of the MMC Chula Vista Expansion (Project) is June 1, 2009. The Participating Transmission Owner (PTO) is San Diego Gas & Electric Company (SDG&E). The proposed Point of Interconnection is SDG&E's 69 kV transmission line TL6929 (Otay substation to Otay generation), located in Chula Vista, San Diego County, California. There is no alternative Point of Interconnection. The MMC Chula Vista Expansion Project occupies Queue Position #90 in the CAISO Controlled Grid Generation Queue (Queue).

The CAISO issued an Interconnection System Impact Study (ISIS) Report for this Project on March 21, 2007, which provided an analysis of the system impacts and necessary mitigation measures.

In accordance with FERC's Large Generation Interconnection Procedures (LGIP), the IC, CAISO, and PTO agreed that an Interconnection Facilities Study (IFAS) was required to determine the +/- 20 percent cost estimate, detailed work scope, and detailed schedule to construct the facilities necessary to interconnect the Project to the CAISO Controlled Grid. This IFAS was performed by the PTO under the direction of the CAISO. The IFAS determined cost estimates, work scope, and construction schedule for the Interconnection Facilities necessary to interconnect the Project to the CAISO Controlled Grid.

Due to the withdrawal of the project occupying Position #27 in the Queue, a restudy was performed, analyzing a number of system configuration scenarios. The re-study considered several scenarios, including the most conservative assumption of a delay in the existing South Bay Power Plant retirement beyond 2010.

Because machine dynamics data remained unchanged between the ISIS and the IFAS, no transient or post-transient stability issues are anticipated with the revised Queue.

Based on the proposed operating date, the Point of Interconnection, and the results of the restudy, the following Network Upgrades are recommended to safely and reliably interconnect the Project:

A. Replace TL641 (Montgomery-South Bay) and TL642 (Montgomery-South Bay-Sweetwater) 69 kV circuit breakers (MG641 and MG642) in Montgomery substation. These are Reliability Network Upgrades that are mandatory.

B. TL6929 (Otay Generation-Otay) – Reset TL6929 relays to achieve a continuous line rating of 136 MVA.

C. TL642B (South Bay-Montgomery Tap) – Reset TL642 relays to achieve a continuous line rating of 200 MVA.

D. TL644 (South Bay-Sweetwater) - Reconductor approximately 3800' of single 1750 kcmil AL cable with bundled 1750 kcmil AL cable between South Bay and Sweetwater substations in order to achieve a continuous line rating of 200 MVA. Replace two (2)

existing wood poles with steel cable poles to accommodate additional pole loading. Replace two (2) 69 kV disconnect switches at South Bay substation.

E. TL649A (Otay-Otay Tap) – Reconductor approximately 5330' of single overhead 4/0 CU conductor with 636 ACSS conductor between Otay substation and Otay tap to achieve a continuous line rating of 90 MVA. Replace approximately twenty seven (27) wood poles with twenty three (23) Class H2 and four (4) anchor-bolted steel poles to accommodate additional pole loading. Replace Switch 649-3 to accommodate higher loading. Replace TL649 69 kV circuit breaker and two (2) 69 kV disconnect switches at Otay substation.

F. Monitor TL642 (South Bay-Montgomery Tap-Sweetwater) and TL644 (South Bay-Sweet Water) loading conditions. Install a Special Protection System (SPS) that sequentially trips MMC Chula Vista Expansion generating units when one of these lines is open and the other exhibits loading in excess of 205 MVA, which is the emergency rating of the lines. The SPS will trip generating units until the overloaded line returns to or under 205 MVA. Utilize existing TL642 and TL644 monitoring equipment. Install new SPS panel at Otay substation. The SPS is needed even if the lines are upgraded to 205 MVA because the lines upgrade to the rating over 205 MVA will require rebuilding of the lines, which is more costly. Loading of the lines in the excess of 205 MVA is expected only under contingency conditions with a certain generation dispatch which is quite rare.

Thermal analysis results of the restudy can be found in Appendix C. The cost and estimate of time to construct for the Interconnection Facilities are summarized in Table 1.1.

Table 1.1: +/-20% Estimated Cost and Estimated Time to Construct

Type of Upgrade	Location	Description	Estimated Cost x 1,000[1]	Estimated Time To Construct[2]
PTO's Interconnection Facilities	None	None	$0	0 Months
Reliability Network Upgrades	Montgomery Substation	• Replace TL641 and TL642 69kV circuit breakers (MG641 and MG642) at Montgomery substation	$399	6 Months
Delivery Network Upgrades	TL6929 Substation	• Reset TL6929 relays at Otay substation to achieve a continuous line rating of 136MVA	$5	1 Month
	TL642B Substation	• Reset TL642 relays to achieve a continuous line rating of 200MVA	$5	1 Month
	TL644 Transmission	• Reconductor approximately 3800' of underground cable to achieve a continuous rating of 200MVA	$4,995	18 Months
	TL644 Substation	• Replace two (2) 69kV disconnect switches at South Bay	$131	6 Months
	TL649A Transmission	• Reconductor approximately 5330' of overhead conductor to achieve a continuous rating of 90MVA	$2,669	18 Months
	TL649A Substation	• Replace TL649 69kV circuit breaker and two (2) 69kV disconnect switches at Otay	$216	6 Months
	Sweetwater and Otay Substations	• Install Special Protection System (SPS) that monitors TL642 and TL644 loading conditions and sequentially trips MMC Chula Vista Expansion generating units during adverse loading conditions until overloaded line returns to or under 205MVA	$100	6 Months
Total	**Substation & Transmission**		**$8,520**	**18 Months**

The construction schedule estimate to design, procure, and construct the facilities typically begins after the signing of the Large Generator Interconnection Agreement (LGIA) and does not include the time required for environmental review and the permitting processes, if applicable. California Public Utilities Commission licensing will not be required by SDG&E to install the Reliability and some of the Delivery Network Upgrades (relay resettings and

[1] All costs estimates are +/-20% estimates in "as year spent" dollars. Taxes, landscaping, under grounding, walls, gates, driveways, CAISO metering, and environmental and licensing costs are not included. All Interconnection Facilities costs for ROW are assumed to be the responsibility of the Interconnection Customer. Network Upgrade costs exclude acquisition of new transmission Right-Of-Way (ROW) and substation land.

[2] Estimated time to construct includes time for design, equipment procurement, and construction. Excludes time for environmental review and permitting.

circuit breaker/switch replacement) equipment since all work is within the existing fence lines/right-of-ways and will not increase the high side voltage. CPUC licensing may be required for the remainder of the Delivery Network Upgrades (line reconductoring). This licensing may be minimized if the IC includes the PTO's scope of work in the IC's environmental review (CEQA). A finding of no significant unavoidable environmental impact during the IC's CEQA process will allow the PTO to file an Advice Letter with the CPUC. The alternative is for the PTO to file a permit to construct (PTC) with the CPUC, which may take up to two (2) years for approval. Other federal, state, and local permits may be required prior to beginning construction. If the generation developer has any questions regarding the CEQA process, they should contact the California Energy Commission (CEC) which is responsible for the power plant licensing.

To accommodate the commercial operation date of June 1, 2009, an expedited schedule is needed. SDG&E and the IC compiled a draft Engineering & Procurement (E&P) Agreement to begin the design and procurement phases for the Interconnection Facilities on September 17, 2007. As of January 4, 2008, the IC indicated that they would like to begin renegotiating a final E&P Agreement, which is now nearing finalization. Per Section 9 of the LGIP, an E&P Agreement may be utilized prior to executing an LGIA. The E&P Agreement authorizes the PTO to commence engineering and procurement of long lead-time items necessary for the interconnection.

The project will be deliverable at full capacity if the IC chooses to install three SPS's and upgrade TL 6929. The rest of the Deliverability Upgrades can be performed at a later date.

2. Detailed Project Information and Point of Interconnection

The MMC Chula Vista Expansion Project is a proposed increase in existing generation capacity. An existing generating unit rated at 49.5 MW will be removed and replaced with two (2) LM6000 natural gas fired combustion turbine/generator sets. The net output of these two units to the CAISO Controlled Grid will be 93 MW. The proposed location of the project is in Chula Vista, San Diego County, California.

MMC Chula Vista, LLC proposes the following milestone dates:

A. Proposed In-Service Date: April 1, 2009

B. Proposed Trial Operation Date: May 1, 2009

C. Proposed Commercial Operation Date: June 1, 2009

The proposed in-service and trial operation dates were modified by the IC in the draft E&P Agreement. The original dates submitted in the Interconnection Request were April 1, 2007, May 1, 2007, and June 1, 2007, respectively.

The requested Point of Interconnection is to SDG&E's 69 kV transmission line TL6929 (Otay substation to Otay generation). No alternative Point of Interconnection was identified.

A conceptual one-line diagram of the transmission system in the area of the proposed interconnection is shown in Figure 2.1. Figures 2.2, 2.3, and 2.4 show the transmission facilities in the vicinity and the project location.

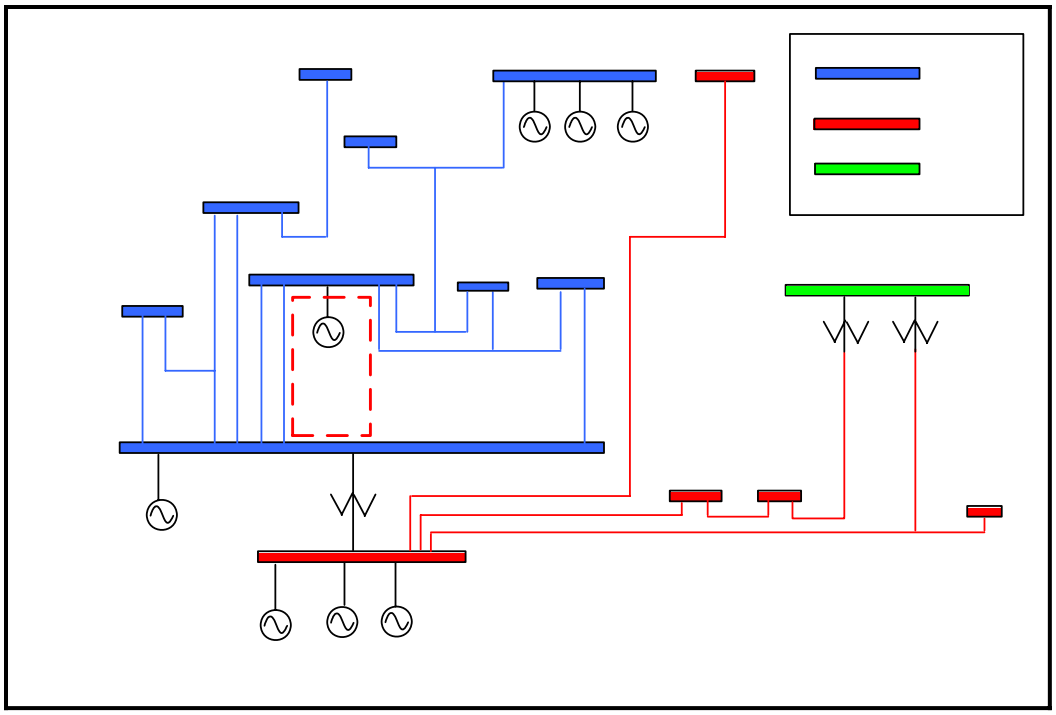

Figure 2.1: Conceptual One-line Diagram

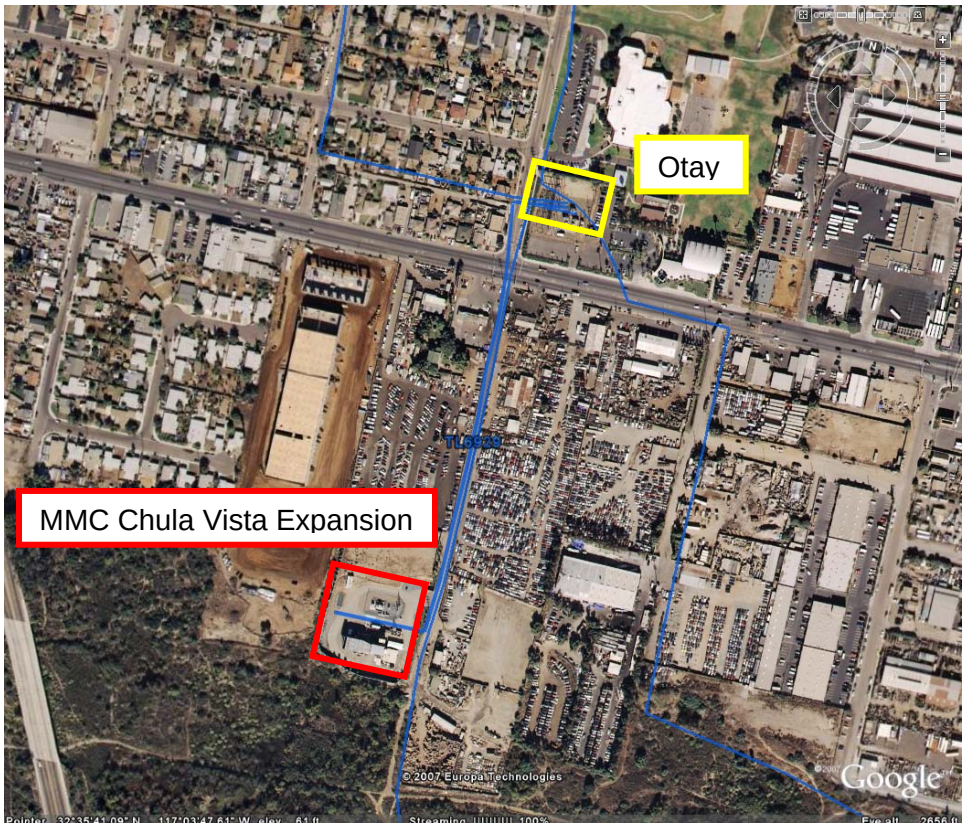

Figure 2.2: Project Vicinity Map

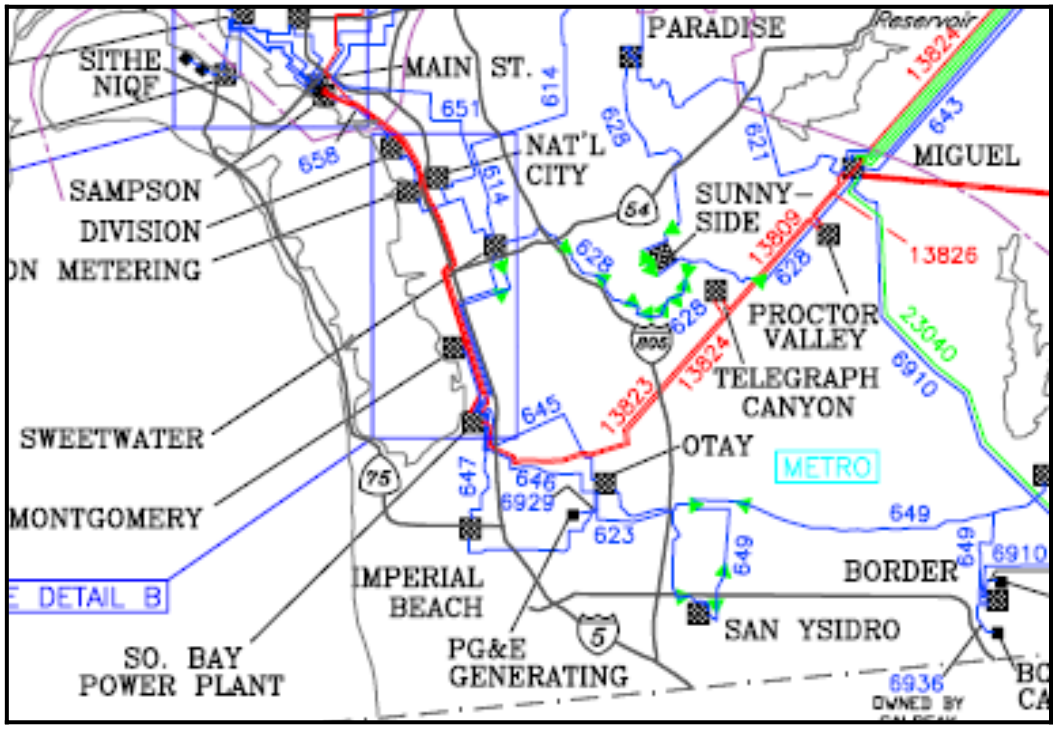

Figure 2.3: Project Vicinity Map with Labeled Facilities

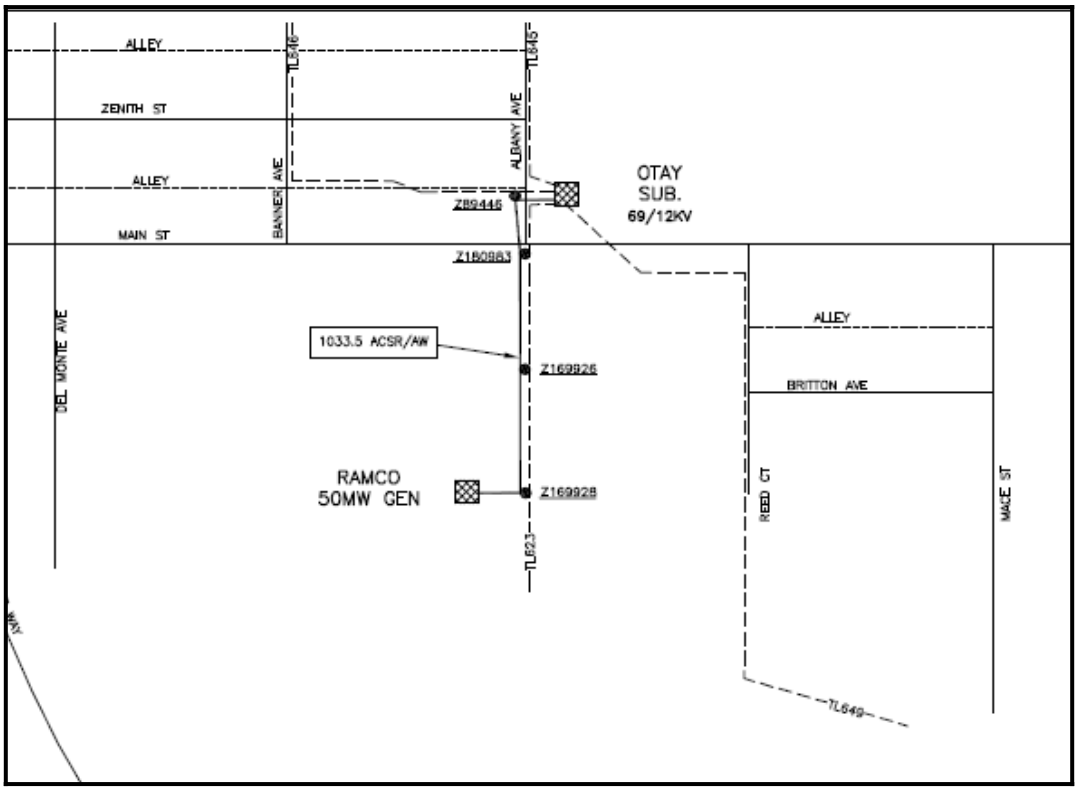

Figure 2.4: Labeled Tie Line Circuit Map Showing Existing 50MW Otay Generation

3. Summary of System Impact Study Results and Mitigation Plan

The Interconnection System Impact Study (ISIS) issued on June 7, 2007 concluded that the Project at full output would:

A. Cause one (1) Category A (normal) overload:

   a. TL6929 (Otay substation-Otay generation)

B. Cause three (3) Category B overloads:

   a. TL649A (Otay-Otay Lake Tap)

   b. TL642B (Sweetwater-Montgomery Tap)

   c. TL644 (South Bay-Sweetwater)

C. Cause three (3) Category C overloads:

   a. TL649A (Otay-Otay Lake Tap)

   b. TL642B (Sweetwater-Montgomery Tap)

   c. TL644 (South Bay-Sweetwater)

D. Cause four (4) PTO transmission circuit breakers to exceed fault duty ratings.

E. Cause no adverse transient performance impacts on the transmission system.

F. Cause no impairment of the tax-exempt status of the interest on Local Furnishing Bonds.

Due to the withdrawal of the project occupying Position #27 in the Queue, a restudy was performed for the MMC Chula Vista Project, evaluating a number of Otay and South Bay bus configurations and Border generation dispatch scenarios. Other generation projects that were withdrawn from the queue were located farther from the MMC Chula Vista Project and therefore did not have an impact on the study results. The restudy also incorporated several SDG&E transmission projects recently approved by the CAISO, including a new Miguel 230/138kV transformer, TL651 (National City-Wabash 69 kV) Main Street loop-in, and a second Division-Naval Station Metering 69kV line. Since the machine dynamics data remained unchanged between the ISIS and the IFAS, no transient or post-transient stability issues are anticipated with the revised Queue.

The restudy criteria followed the same guidelines as ISIS study criteria, which can be found in Appendix B. Thermal results of the restudy identify the same Category A, B, and C overloads as originally identified in the ISIS. Thermal analysis results of the restudy can be found in Appendix C. A restudy of the short circuit analysis using updated system parameters and assumptions indicates that the four Otay breakers originally identified in

the ISIS as being over duty are no longer in violation. Instead, two breakers in Montgomery substation (MG641 and MG642) were found to be overstressed.

4. Deliverability Assessment Study Results

The original cluster Deliverability Assessment Study was performed by the CAISO during the ISIS. This assessment determined that the Project had zero deliverability to the CAISO Controlled Grid under peak load conditions. It was determined at that time that the Project could be made 100% deliverable if the following transmission line overloads were mitigated:

A. TL6929 (Otay substation-Otay generation) – also identified in the ISIS

B. TL603D (National City-Sweetwater Tap)

C. Future 69 kV transmission line from Silvergate to National City, presently section of National City to Wabash 69 kv transmission line (Main Street-National City)

D. TL642B (Montgomery Tap-Sweetwater) – also identified in the ISIS

E. TL603A (Sweetwater-Sweetwater Tap)

Additional overloads identified during the original Deliverability Assessment were the responsibility of higher queued projects.

The CAISO has since performed another cluster Deliverability Assessment Study on account of the withdrawal of Generation Project #27 in the CAISO Generation Interconnection Queue and due to the development of several transmission projects in the SDG&E area. The Deliverability Assessment Study assumed the existing South Bay configuration, although the South Bay Power Plant was not dispatched (had zero output since it was assumed to be retired). The Chula Vista Project generation tie-line was assumed to be upgraded to accommodate the full output of the Project. The updated results, released on January 14, 2008, identified no transmission constraints that the Project would be responsible for mitigating**, making MMC Chula Vista Expansion 100% deliverable**. The results of the Deliverability Assessment Study were different from the results of this Interconnection Facilities Study due to the less conservative assumption regarding the South Bay generation retirement.

CAISO conducts the Deliverability Assessment in accordance with Sections 3.3.2 and 3.3.3 of the LGIP. For more information about Deliverability Assessment, please refer to http://www.caiso.com/181c/181c902120c80.html.

5. Estimated Costs

All costs provided are estimates based on necessary facilities identified in the Interconnection System Impact Study for a Commercial Operation Date of June 1, 2009. Charges for implementing the interconnection of the Project will be made based upon the actual costs incurred. Cost estimates developed within this study are considered to be +/- 20% and include the following assumptions:

A. Project concepts are based on representations from the Interconnection Customer.

B. Project concepts are based on mandatory reliability criteria from applicable reliability and regulatory authorities (NERC, WECC, and CAISO).

C. Project concepts are based on sound engineering judgment.

D. All costs are based on SDG&E construction methods and techniques.

E. All costs are in “as year spent” dollars.

F. All costs included in this report are valid for 90 days only.

Table 5.1 summarizes the cost of transmission reinforcements identified in this study.

Table 5.1: +/-20% Cost Estimate Summary[3]

Type of Upgrade	Location	Description	Estimated Cost x 1,000
PTO's Interconnection Facilities	None	None	$0
Reliability Network Upgrades	Montgomery Substation	• Replace TL641 and TL642 69kV circuit breakers (MG641 and MG642) at Montgomery substation	$399
Delivery Network Upgrades	TL6929 Substation	• Reset TL6929 relays at Otay substation to achieve a continuous line rating of 136MVA	$5
	TL642B Substation	• Reset TL642 relays to achieve a continuous line rating of 200MVA	$5
	TL644 Transmission	• Reconductor approximately 3800' of underground cable to achieve a continuous rating of 200MVA	$4,995
	TL644 Substation	• Replace two (2) 69kV disconnect switches at South Bay	$131
	TL649A Transmission	• Reconductor approximately 5330' of overhead conductor to achieve a continuous rating of 90MVA	$2,669
	TL649A Substation	• Replace TL649 69kV circuit breaker and two (2) 69kV disconnect switches at Otay	$216
	Sweetwater and Otay Substations	• Install Special Protection Scheme (SPS) that monitors TL642 and TL644 loading conditions and sequentially trips MMC Chula Vista Expansion generating units during adverse loading conditions until overloaded line returns to or under 205MVA	$100
Total	**Substation & Transmission**		**$8,520**

5.1 Participating TO's Interconnection Facilities

The cost estimate for the PTO's Interconnection Facilities includes any substation and transmission line facilities required to interconnect the Project. The estimate does not include any facilities constructed, owned, and operated by the IC.

[3] All costs estimates are +/-20% estimates in "as year spent" dollars. Taxes, landscaping, under grounding, walls, gates, driveways, CAISO metering, and environmental and licensing costs are not included. All Interconnection Facilities costs for ROW are assumed to be the responsibility of the Interconnection Customer. Network Upgrade costs exclude acquisition of new transmission Right-Of-Way (ROW) and substation land.

The PTO's Interconnection Facilities are all the facilities and equipment owned, controlled, or operated by the CAISO/SDG&E from the Point of Interconnection to the Point of Change of Ownership (see Figure 5.1). The Point of Interconnection is SDG&E's 69 kV transmission line TL6929, which currently terminates between the existing Otay generation facilities and Otay substation. The Point of Change of Ownership is at or near the fence of the existing Otay generation site.

No Interconnection Facilities are needed to interconnect the Project to the Otay 69 kV bus, as SDG&E's TL6929 is an existing gen-tie line.

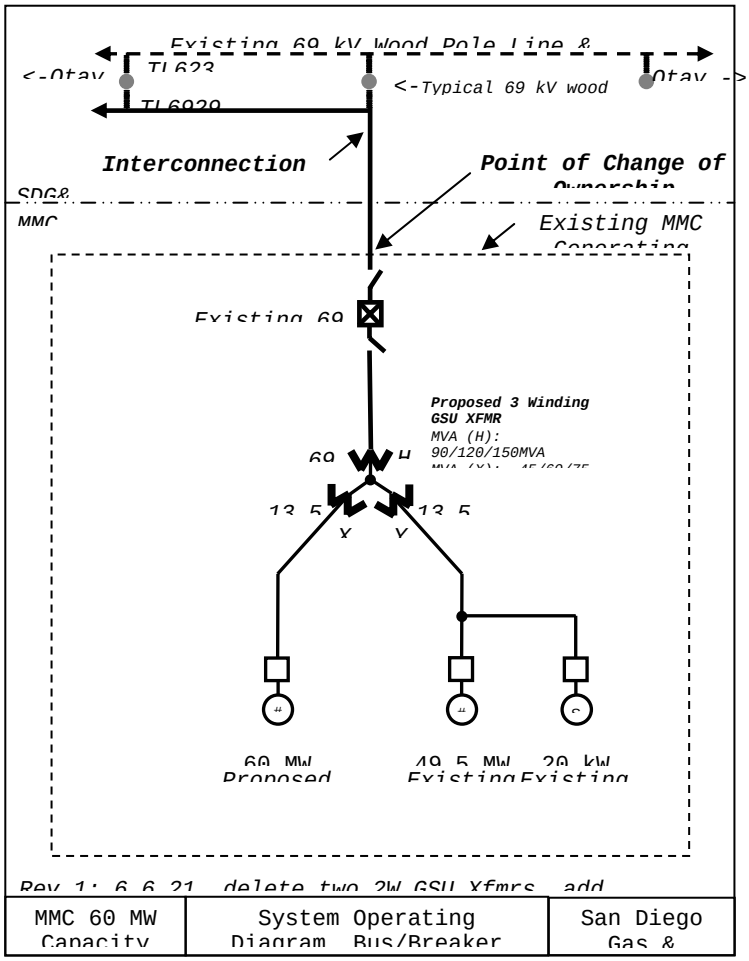

Figure 5.1: Interconnection Facilities

5.2 Network Upgrades

Due to the withdrawal of the project occupying Position #27 in the Queue, a restudy was performed, analyzing a number of system configuration scenarios. Based on the proposed operating date, Point of Interconnection, and the results of the restudy, the following Network Upgrades are needed to safely and reliably interconnect the Project:

A. Replace TL641 and TL642 69kV circuit breakers (MG641 and MG642) in Montgomery substation.

B. TL6929 (Otay Substation-Otay generation)– Reset TL6929 relays to achieve a continuous line rating of 136 MVA.

C. TL642B (Sweetwater-Montgomery Tap)– Reset TL642 relays to achieve a continuous line rating of 200 MVA.

D. TL644(South Bay-Sweetwater) - Reconductor approximately 3800' of single 1750 kcmil AL cable with bundled 1750 kcmil AL cable between South Bay and Sweetwater substations in order to achieve a continuous line rating of 200 MVA. Replace two (2) existing wood poles with steel cable poles to accommodate additional pole loading. Replace two (2) 69 kV disconnect switches.

E. TL649A (Otay-Otay Lake Tap)– Reconductor approximately 5330' of single overhead 4/0 CU conductor with 636 ACSS conductor between Otay substation and Otay tap to achieve a continuous line rating of 90 MVA. Replace approximately twenty seven (27) wood poles with twenty three (23) Class H2 and four (4) anchor-bolted steel poles to accommodate additional pole loading. Replace Switch 649-3 to accommodate higher loading. Replace TL649 69 kV circuit breaker and two (2) 69 kV disconnect switches.

F. Monitor TL642 (South Bay-Montgomery Tap-Sweetwater) and TL644 (South Bay-Sweetwater) loading conditions. Install an SPS that sequentially trips MMC Chula Vista Expansion generating units when one of these lines is out of service and the other exhibits loading in excess of 205 MVA. The SPS will trip generating units until the overloaded line returns to or under 205 MVA. Utilize existing TL642 and TL644 monitoring equipment. Install new SPS panel at Otay substation.

The IC is obligated to advance funds for the construction of Reliability Network Upgrades in the amount of **$399,000**.

The IC is not obligated to advance funds in the amount of **$8.121 Million** for the construction of Delivery Network Upgrades unless the IC elects to construct the Delivery Network Upgrades. However, in the event that the IC elects not to construct Delivery Network Upgrades, the Project's output will be curtailed under normal conditions and SPS's must be placed in service to mitigate the overloads identified as being caused by the addition of the Project under contingencies. The SPS's will monitor loading on the following lines and sequentially trip the Projects' units until the monitored lines' loadings return to or under the following levels:

A. TL642B (South Bay-Montgomery Tap):170 MVA

B. TL644 (South Bay-Sweetwater): 97 MVA

C. TL649A (Otay-Otay Lake Tap): 50 MVA

If the IC elects an SPS in place of any Delivery Network Upgrade and the Otay- Otay generation tie line is upgraded, the Project will still be considered 100% deliverable if the SPS meets “California ISO Planning Standards” Criteria ISO G1 through ISO G19. The Project will continue to be monitored by and subject to unit tripping by any elected SPS’s until the PTO’s Grid Operations determine that system conditions no longer warrant the SPS.

6. Estimated Time to Construct

The estimate for the length of time that SDG&E needs to design, procure, and construct and/or upgrade a generation project's Interconnection Facilities, Reliability Network Upgrades, and Delivery Network Upgrades is a +/-20% estimate of the total construction time. These estimates are dependent on many factors (when applicable), including but not limited to:

A. Whether an exemption can be obtained from the California Public Utilities Commission's (CPUC's) G.O. 131-D Certificate of Public Convenience and Necessity (CPCN) process.

B. Whether an exemption can be obtained from the CPUC's Permit to Construct (PTC) process.

C. Whether the IC includes the full scope of the transmission and substation additions and upgrades in its application to the lead agency for the California Environmental Quality Act (CEQA) review.

D. Whether the IC intends to fund the Delivery Network Upgrades.

E. Whether the IC chooses to build its own Interconnection Facilities.

The outcome of these processes and/or IC project/business decisions could increase cost and/or construction duration. Absent an exemption, the process of obtaining the CPUC's approval could take one to two years, or even longer.

CPUC licensing will not be required by SDG&E to construct the Reliability Upgrades equipment since all work is within the existing fence lines/right-of-ways and will not increase the high side voltage. CPUC licensing may be required for the Delivery Network Upgrades. This licensing may be minimized if the IC includes the PTO's scope of work in the IC's environmental review (CEQA). A finding of no significant unavoidable environmental impact during the IC's CEQA process will allow the PTO to file an Advice Letter with the CPUC. The alternative is for the PTO to file a permit to construct (PTC) with the CPUC, which may take up to 2 years for approval. However, other federal, state, and local permits may be required prior to beginning construction.

The estimated time to construct/upgrade the identified facilities summarized in Table 6.1 does not include the time needed for environmental review and permitting. The estimated time SDG&E needs to design, procure, and construct the facilities is listed in the table. The design phase does not typically start until successful completion of the Large Generator Interconnection Agreement (LGIA).

Table 6.1: +/-20% Estimated Time to Construct[4]

Type of Upgrade	Location	Description	Estimated Time To Construct
PTO's Interconnection Facilities	None	None	0 Months
Reliability Network Upgrades	Montgomery Substation	• Replace TL641 and TL642 69kV circuit breakers (MG641 and MG642) at Montgomery substation	6 Months
Delivery Network Upgrades	TL6929 Substation	• Reset TL6929 relays at Otay substation to achieve a continuous line rating of 136MVA	1 Month
	TL642B Substation	• Reset TL642 relays to achieve a continuous line rating of 200MVA	1 Month
	TL644 Transmission	• Reconductor approximately 3800' of underground cable to achieve a continuous rating of 200MVA	18 Months
	TL644 Substation	• Replace two (2) 69kV disconnect switches at South Bay	6 Months
	TL649A Transmission	• Reconductor approximately 5330' of overhead conductor to achieve a continuous rating of 90MVA	18 Months
	TL649A Substation	• Replace TL649 69kV circuit breaker and two (2) 69kV disconnect switches at Otay	6 Months
	Sweetwater and Otay Substations	• Install Special Protection System (SPS) that monitors TL642 and TL644 loading conditions and sequentially trips MMC Chula Vista Expansion generating units during adverse loading conditions until overloaded line returns to or under 205MVA	6 Months
Total	**Substation & Transmission**		**18 Months**

The proposed in-service date of April 1, 2009 and commercial operation date of June 1, 2009 appear to be feasible if the IC includes the PTO's scope of work in the IC's environmental review, and current E&P Agreement negotiations between the IC and PTO are completed immediately. However, depending upon the actual duration of these negotiations, a more feasible in-service date may need to be proposed upon execution of the E&P Agreement.

[4] Estimated time to construct includes time for design, equipment procurement, and construction. Excludes time for environmental review and permitting.

Per Section 9 of the LGIP, an E&P Agreement may be utilized prior to executing an LGIA. The E&P Agreement authorizes the Participating TO to commence engineering and procurement of long lead-time items necessary for the interconnection. To accommodate the in-service date, SDG&E and the IC are finalizing an Engineering & Procurement (E&P) Agreement to begin the design and procurement phases for the Interconnection Facilities prior to executing an LGIA.

7. Facilities Study Assumptions

Under the direction of the CAISO, the PTO provided the +/- 20 percent cost estimate, detailed work scope, and detailed schedule to construct the facilities necessary to interconnect the Project to the CAISO Controlled Grid using the following assumptions:

A. The maximum net output to the grid is 93 MW.

B. The expected commercial operation date is June 1, 2009.

C. MMC Chula Vista Expansion occupies Queue Position #90.

D. The IC will engineer, procure, construct, own, and maintain its project facility.

E. This study accounted for the planned generating facilities in PTO's service territory whose schedules are concurrent with or precede MMC Chula Vista Expansion's schedule.

F. Due to the withdrawal of the project occupying Position #27 in the Queue, separate base cases were developed with the existing South Bay configuration and proposed 230/69 kV South Bay substation.

The base cases were developed with different generation dispatch of the power plants in the Southern San Diego area. The cases may be available for the generation developer for review if the developer signs a confidentiality agreement with the WECC and a non-disclosure agreement with the CAISO and/or SDG&E.

8. Facilities Study Scope

This IFAS provides the +/- 20% cost estimates, detailed work scope, and detailed schedule to construct facilities for the PTO's Interconnection Facilities required to interconnect the Project to the CAISO grid.

The development of the cost estimates, work scope, and schedule to construct encompassed the following evaluations:

8.1 Transmission Line Evaluation

SDG&E's Transmission Engineering group evaluated the proposed interconnection for potential impacts on SDG&E-owned transmission facilities. The evaluation included, but was not limited to, the following:

A. How best to connect the proposed generator in a safe, reliable, and cost-effective manner, while considering future system requirements and operational convenience.

B. The scope of any modifications necessary to accommodate the proposed interconnection.

8.2 Substation Evaluation

SDG&E's Substation Engineering group evaluated the proposed interconnection for potential impacts on SDG&E-owned substation facilities. The evaluation included, but was not limited to, the following:

A. How best to connect the proposed generator in a safe, reliable, and cost-effective manner, while considering future system requirements and operational convenience.

B. The scope of any modifications necessary to accommodate the proposed interconnection.

8.3 Land and Right-of-Way Evaluation

SDG&E evaluated the scope of the proposed modifications or extensions to SDG&E-owned transmission and substation facilities to determine if any additional land should be acquired.

8.4 System Protection Evaluation

SDG&E's System Protection group evaluated the proposed interconnection for potential impacts on the transmission system. The evaluation included, but was not limited to, the following:

A. Coordination with existing system protection philosophy and systems.

B. Development of new System Protection Systems (SPS), if applicable.

C. Modification to existing SPS, if applicable.

D. Communications requirements.

8.5 Industrial Development Bonds (specific to SDG&E)

The ISIS determined that this Project does not appear to cause impairment of the tax-exempt status of the interest on Local Furnishing Bonds. Assumptions remained unchanged, so this Project still does not appear to cause impairment of the tax-exempt status of the interest on Local Furnishing Bonds.

9. Re-Study

This IFAS will be performed according to the assumptions shown in the Section titled "Study Assumptions." In the event that these assumptions are changed, an updating study may be required to re-evaluate the Project's impact on CAISO's transmission grid. The IC would be responsible for paying for any such updating study. Some of the changes that might prompt an update study are:

A. Change in interconnection date beyond the provisions set forth in the LGIP.

B. Change in Interconnection Queue position.

C. Change in Project's MW size beyond the provisions set forth in the LGIP.

D. Change in interconnection plan.

E. Change in interconnection plans of higher-queued projects which could affect the upgrades required for this project.

Appendix A

Definitions

CPUC CPCN	California Public Utilities Commission Certificate Of Public Convenience and Necessity.
Category A Contingency	All facilities in service, no contingency.
Category B Contingency	Event resulting in the loss of a single element. (*The CAISO considers the loss of a critical generator followed with redispatch of the remaining system generation and the subsequent loss of any single element as a Category B contingency.)*
Category C Contingency	Event resulting in the loss of two or more (multiple) elements.
Category D Contingency	Extreme event resulting in two or more (multiple) elements removed or cascading out of service.
Delivery Network Upgrades	Transmission facilities at or beyond the Point of Interconnection, other than Reliability Network Upgrades, identified in the Interconnection Studies to relieve constraints on the ISO Controlled Grid.
Interconnection Facilities	The Participating TO's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the ISO Controlled Grid. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades.
Interconnection Customer	Any entity, including a Participating TO or any of its Affiliates or subsidiaries, that proposes to interconnect its Generating Facility with the ISO Controlled Grid.

Interconnection Customer's Interconnection Facilities

All facilities and equipment, as identified in Part A of the Standard Large Generator Interconnection Agreement, that are located between the Generating Facility and the Point of Change of Ownership, including any modification, addition, or upgrades to such facilities and equipment necessary to physically and electrically interconnect the Generating Facility to the ISO Controlled Grid. Interconnection Customer's Interconnection Facilities are sole use facilities.

Participating TO's Interconnection Facilities

All facilities and equipment owned, controlled, or operated by the Participating TO from the Point of Change of Ownership to the Point of Interconnection as identified in Part A to the Standard Large Generator Interconnection Agreement, including any modifications, additions or upgrades to such facilities and equipment. Participating TO's Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades.

Reliability Network Upgrades

The transmission facilities at or beyond the Point of Interconnection necessary to interconnect a Large Generating Facility safely and reliably to the ISO Controlled Grid, which would not have been necessary but for the interconnection of the Large Generating Facility, including Network Upgrades necessary to remedy short circuit or stability problems resulting from the interconnection of the Large Generating Facility to the ISO Controlled Grid. Reliability Network Upgrades also include, consistent with WECC practice, the facilities necessary to mitigate any adverse impact the Large Generating Facility's interconnection may have on a path's WECC rating.

Appendix B

Study Criteria

Study Criteria

The Western Electricity Coordinating Council (WECC) and North American Electric Reliability Council (NERC) planning criteria were used to evaluate the system impact.

Thermal Steady-State Criteria

All power flow analyses are conducted with the General Electric PSLF Version 16 software.

Category A – All Facilities in Service

Category A (N-0) normal overloads are those that exceed 100% of normal ratings that occur with all facilities in service.

Category B – Loss of Single Element

Category B emergency overloads are those that exceed 100% of emergency ratings that occur due to a Category B contingency. A Category B contingency is commonly referred to as an "N-1" event, where there is a loss of a single element. No loss of customer load is allowed for Category B contingencies.

A single transmission circuit outage with one generator already out of service and the system adjusted shall meet the performance requirements of the NERC Planning Standards for Category B contingencies.

Category C – Loss of Multiple Elements

Category C emergency overloads are those that exceed 100% of emergency ratings that occur due to a Category C contingency. A Category C contingency is commonly referred to as an "N-2" event, where there is a loss of two or more elements. Planned (controlled) interruption of customer load and/or generation may occur and contracted firm (non-recalled reserved) transfers may be curtailed.

Short Circuit Breaker Duty Criteria

Short circuit studies are performed to determine the maximum fault currents on various buses in the vicinity of the project. This study assesses the impact of increased fault duty resulting from the interconnection of the project. The Aspen Version 9.0 program is used to conduct the detailed short circuit studies with three line-to-ground (3LG) and single line-to-ground (LG) faults to examine the impact of the project on the system. Equipment that may become overstressed as a result of the added generation will be identified using the criteria in Table 5.1.

Equipment	Disturbance	Criteria
Existing Generator Breakers	LG and 3LG faults	No fault exceeds 100% of the nameplate interrupting rating.
Existing Non-Generator Breakers ≤ 230 kV	LG and 3LG faults	No fault exceeds 115% of the nameplate interrupting rating.
Existing Non-Generator Breakers > 230 kV	LG and 3LG faults	No fault exceeds 100% of the nameplate interrupting rating.

Table 5.1: SDG&E Short Circuit Breaker Duty Criteria Summary

Transient Stability Criteria

Transient stability analysis is a time-based simulation that assesses the performance of the power system during (and shortly following) a contingency. Transient stability studies were performed to ensure system stability following critical faults on the system.

The system is considered stable if the following conditions are met:

A. Machine Synchronism - All machines in the WECC interconnected system must remain in synchronism as demonstrated by relative rotor angles (unless modeling problems are identified and concurrence is reached that a problem does not really exist).

B. Simulation Time and System Damping

   a. A stability simulation will be deemed to exhibit positive damping if a line defined by the peaks of the machine relative rotor angle swing curves tends to intersect a second line connecting the valleys of the curves with the passing of time.

   b. Corresponding lines on bus voltage swing curves will likewise tend to intersect. A stability simulation, which satisfies these conditions, will be defined as stable.

   c. Duration of a stability simulation run will be twenty seconds unless a longer time is required to ascertain damping.

   d. The transient performance analysis will start 6 cycles after the fault clearing and conclude at the end of the simulation.

   e. A case will be defined as marginally stable if it appears to have zero percent damping and the voltage dips are within (or at) the WECC Reliability Criteria limits.

Performance of the transmission system is measured against the WECC Reliability Criteria and the NERC Planning Standards.

Table 5.2 is an excerpt from the NERC/WECC Reliability Criteria. The reliability and performance criteria were applied to the entire WECC transmission system.

NERC/WECC Categories	Transient Voltage Dip Standard	Minimum Transient Frequency Standard
A System normal	Nothing in addition to NERC	
B One element out-of-service	Not to exceed 25% at load buses or 30% at non-load buses. Not to exceed 20% for more than 20 cycles at load buses.	Not below 59.6Hz for 6 cycles or more at a load bus.
C Two or more elements out-of-service	Not to exceed 30% at any bus. Not to exceed 20% for more than 40 cycles at load buses.	Not below 59.0Hz for 6 cycles or more at a load bus.
D Extreme multiple-element outages	Nothing in addition to NERC	

Table 5.2: WECC Disturbance-Performance Table of Allowable Effects on Other Systems

Post-Transient Voltage Criteria

Table 5.3 is an excerpt from the NERC/WECC Planning Standards. The governor power flow is utilized to the post-transient voltage deviation criteria.

Performance Level/Category	Disturbance	Post Transient Voltage Deviation Criteria
B	Generator One Circuit One Transformer PDCI	Not to exceed 5% at any bus.*
C	Two Generators Two Circuits IPPDC	Not to exceed 10% at any bus.
* SCE allows deviation up to 7% on certain buses for N-1		

Table 5.3: WECC Disturbance-Performance Table of Allowable Effects on Other Systems

Reactive Power Deficiency Criteria

Table 5.4 summarizes the voltage support and reactive power criteria in the NERC/WECC Planning Standards.

Performance Level/Category	Disturbance	Reactive Power Deficiency Criteria
B	Generator One Circuit One Transformer PDCI	Governor power flow to reach convergence at 105% of SDG&E load level
C	Two Generators Two Circuits IPPDC	Governor power flow to reach convergence at 102.5% of SDG&E load level

Table 5.4: Reactive Power Deficiency Criteria Summary

Appendix C

Restudy Thermal Analysis Results

Post Processor 08HS MMC 0BD Category B MVA1

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre0	08ESYNOY Post0	08ESYOOY Pre0	08ESYOOY Post0
LINE HARQUAHA 500kV-DEVERS 500kV ck1	line IV-ML 500kV SPS 6.8A	2338.2	2987.7	1.10	1.10	1.10	1.10
	line IV-ML 500kV SPS 6.8B	2338.2	2987.7	1.11	1.11	1.11	1.11
	line IV-ML 500kV SPS 6.8C	2338.2	2987.7	1.11	1.11	1.11	1.11
	line IV-ML 500kV SPS 6.8D	2338.2	2987.7	1.13	1.13	1.13	1.13
LINE BORREGO 69kV-NARROWS 69kV ck1	line SANTYSBL to CREELMAN 69 ck 1	12.5	14.5	1.02	1.02		1.02
	line WARNERS to SANTYSBL 69 ck 1	12.5	14.5	1.04	1.04		1.04
LINE MAINST51 138kV-SOUTHBAY 138kV ck1	line SOUTHBAY to MAINST50 138 ck 1	150	150	1.14	1.12	1.12	1.10
	line MISSION to GRNT HLL 138 ck 1	150	150	1.02	1.00		
	line GRNT HLL to SOUTHBAY 138 ck 1	150	150	1.04	1.02	1.01	1.00
	line LOSCOCHS to SOUTHBAY 138 ck 1	150	150	1.01			
	line OLD TOWN to KETTNER 69 ck 1	150	150	1.09	1.06	1.08	1.05
	line KETTNER to B 69 ck 1	150	150	1.00			
	tran OLD TOWN 69 to OLD TOWN 230 ck 1	150	150	1.02		1.01	
	tran OLD TOWN 69 to OLD TOWN 230 ck 2	150	150	1.02		1.01	
	tran SOUTHBAY 69 to SOUTHBAY 138 ck 1	150	150	1.09	1.05	1.07	1.02
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.07	1.07	1.02	1.05
TRAN MIGUEL 230kV-MIGUELMP 500kV ck1	tran MIGUEL 230 to MIGUEL 500 ck 2	1120	1329	1.08	1.08	1.07	1.07
TRAN MIGUEL 500kV-MIGUELMP 500kV ck1	tran MIGUEL 230 to MIGUEL 500 ck 2	1120	1329	1.08	1.07	1.07	1.07
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV-ML 500kV SPS 6.8A	215	259	1.35	1.35	1.35	1.35
	line IV-ML 500kV SPS 6.8B	215	259	1.41	1.41	1.40	1.41
	line IV-ML 500kV SPS 6.8C	215	259	1.43	1.43	1.43	1.43
	line IV-ML 500kV SPS 6.8D	215	259	1.49	1.49	1.48	1.49
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.03	1.02	1.03	1.02
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136		1.36		1.38
TRAN MIGUEL 230kV-MIGUEL 500kV ck2	tran MIGUEL 230 to MIGUELMP 500 ck 1	1120	1344	1.07	1.07	1.06	1.06
TRAN LOSCOCHS 69kV-LOSCOCHS 138kV ck2	tran LOSCOCHS 138 to LOSCOCHS 69 ck 1	140	155	1.03	1.03		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	gen SOUTHBY1 15.00	140	143	1.05		1.02	

Post Processor 08HS MMC 0BD Category C MVA1

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre0	08ESYNOY Post0	08ESYOOY Pre0	08ESYOOY Post0
LINE BORREGO 69kV-NARROWS 69kV ck1	Creelman 69kV E Bus	12.5	14.5	1.02	1.02		1.02
	Santa Ysabel 69kV Bus	12.5	14.5	1.04	1.04		1.04
LINE MAINST51 138kV-SOUTHBAY 138kV ck1	Station B 69kV N Bus	150	150	1.00			
	Miguel 69kV S Bus	150	150	1.02		1.01	
	Sweetwater 69kV Bus	150	150	1.08	1.09	1.06	1.08
	line SY-MI50 & SY-GRNT 138 ck 1	150	150	1.32	1.30	1.29	1.27
	LC-SY+ML-LC 138/69KV	150	150	1.00			
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136	1.33	1.33	1.34	1.35
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.11	1.11	1.05	1.09
	PEN-ES 1/2 230KV	97	102	1.01	1.01		
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIPS SA LOAD	97	129	1.16	1.16	1.21	1.18
	SA5W TRIP TL695	97	129	1.57	1.58	1.62	1.60
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIPS SA LOAD	140	160	1.32	1.31	1.27	1.29
	SA5W TRIPS SM LOAD	140	160	1.51	1.50	1.47	1.49
	SA5W TRIP TL695	140	160	1.76	1.76	1.72	1.74
	PQ-NCW + EA-BQ-PQ 138KV	140	160	1.28	1.24	1.21	1.22
LINE OCNSDETP 69kV-STUARTTP 69kV ck1	TA-SO 1 + 2 230KV	32	32	1.07	1.07	1.07	1.07
LINE STUARTTP 69kV-LASPULGS 69kV ck1	TA-SO 1 + 2 230KV	32	32	1.01	1.01	1.01	1.02
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.04	1.04	1.04	1.04
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.19	1.19	1.19	1.19
	PI-CP + TA-TB 138KV	136	136	1.06	1.06	1.07	1.07
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.10	1.10	1.10	1.10
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.04	1.04	1.04	1.04
LINE MAINST50 138kV-SOUTHBAY 138kV ck1	line SY-MI50 & SY-GRNT 138 ck 1	150	150	1.03	1.01	1.00	
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Los Coches 69kV W Bus	71	71	1.03	1.03	1.06	1.03
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	CH-SX-SN+LC-EL 138/69 KV	191	200	1.03	1.03		
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.54	1.70	1.54	1.72
LINE DEL MAR 69kV-PENSQTOS 69kV ck1	Penasquitos 69kV NW Bus	50	50	1.07	1.07		
	PEN-ES 1/2 230KV	50	50	1.01	1.01		
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.01	1.01		
LINE ESCNDIDO 69kV-ASH 69kV ck1	Escondido 69kV SW Bus	120	120	1.01	1.01	1.02	1.01
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line SY-MI51 & SY-MI50 138 ck 1	140	143	1.21	1.12	1.18	1.07
	line SY-MI50 & SY-GRNT 138 ck 1	140	143	1.12	1.04	1.09	
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.07	1.07	1.08	1.08
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Escondido 69kV SW Bus	102	113			1.00	
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.00	1.00	1.01	1.01
LINE MIGUEL 69kV-JAMACHA 69kV ck1	Miguel 69kV N Bus	97	136	1.21	1.22		

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre0	08ESYNOY Post0	08ESYOOY Pre0	08ESYOOY Post0
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.01			
LINE B 69kV-MAIN ST 69kV ck2	Main St 69kV W Bus	97	111	1.03	1.06	1.02	1.05
LINE SAMPSON 69kV-MAIN ST 69kV ck1	Main St 69kV W Bus	129	129	1.01			
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.24	1.22	1.03	1.00
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.23	1.23	1.24	1.23
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97	119	1.20	1.19	1.10	1.08
	ML-JM 1 + 2 69KV	97	119	1.05	1.05		
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.53	1.53	1.52	1.53
	POM-SX 1 + 2 69KV	68	76	1.28	1.28	1.28	1.30
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.29	1.29	1.01	1.10
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.39	1.39	1.29	1.34
LINE POWAY 69kV-POMERADO 69kV ck1	PEN-ES 1/2 230KV	97	136	1.33	1.34	1.19	1.27
LINE CALAVRTP 138kV-CANNON 138kV ck1	PQ-NCW + EA-BQ-PQ 138KV	258	258	1.04			
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	Otay 69kV Bus	55	55			1.12	1.12

Post Processor 08HS MMC 0BD Category B MVA 2

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre0	08ESYNOY Post0	08ESYOOY Pre0	08ESYOOY Post0
LINE MAINST51 138kV-SOUTHBAY 138kV ck1	line SOUTHBAY to MAINST50 138 ck 1	150	150	1.143	1.119	1.122	1.098
	line MISSION to GRNT HLL 138 ck 1	150	150	1.02	1.004		
	line GRNT HLL to SOUTHBAY 138 ck 1	150	150	1.039	1.023	1.014	1.003
	line LOSCOCHS to SOUTHBAY 138 ck 1	150	150	1.01			
	line OLD TOWN to KETTNER 69 ck 1	150	150	1.092	1.057	1.083	1.048
	line KETTNER to B 69 ck 1	150	150	1.001			
	tran OLD TOWN 69 to OLD TOWN 230 ck 1	150	150	1.02		1.005	
	tran OLD TOWN 69 to OLD TOWN 230 ck 2	150	150	1.02		1.005	
	tran SOUTHBAY 69 to SOUTHBAY 138 ck 1	150	150	1.085	1.045	1.067	1.024
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.018	1.016		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV-ML 500kV SPS 6.8A	215	259	1.121	1.121	1.119	1.121
	line IV-ML 500kV SPS 6.8B	215	259	1.166	1.166	1.164	1.166
	line IV-ML 500kV SPS 6.8C	215	259	1.187	1.187	1.185	1.187
	line IV-ML 500kV SPS 6.8D	215	259	1.233	1.233	1.231	1.233
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.025	1.024	1.028	1.024
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	gen SOUTHBY1 15.00	140	143	1.026			

Post Processor 08HS MMC 0BD Category C MVA2

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre0	08ESYNOY Post0	08ESYOOY Pre0	08ESYOOY Post0
LINE MAINST51 138kV-SOUTHBAY 138kV ck1	Station B 69kV N Bus	150	150	1.002			
	Miguel 69kV S Bus	150	150	1.023		1.009	
	Sweetwater 69kV Bus	150	150	1.077	1.088	1.064	1.078
	line SY-MI50 & SY-GRNT 138 ck 1	150	150	1.318	1.299	1.287	1.273
	LC-SY+ML-LC 138/69KV	150	150	1.004			
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.055	1.052	1.003	1.035
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIP TL695	97	129	1.182	1.188	1.219	1.202
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIPS SA LOAD	140	160	1.151	1.144	1.113	1.132
	SA5W TRIPS SM LOAD	140	160	1.32	1.314	1.283	1.302
	SA5W TRIP TL695	140	160	1.543	1.537	1.503	1.524
	PQ-NCW + EA-BQ-PQ 138KV	140	160	1.121	1.085	1.059	1.063
LINE OCNSDETP 69kV-STUARTTP 69kV ck1	TA-SO 1 + 2 230KV	32	32	1.068	1.067	1.067	1.071
LINE STUARTTP 69kV-LASPULGS 69kV ck1	TA-SO 1 + 2 230KV	32	32	1.013	1.012	1.013	1.017
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.186	1.186	1.188	1.188
	PI-CP + TA-TB 138KV	136	136	1.063	1.063	1.065	1.065
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.102	1.102	1.104	1.104
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.037	1.037	1.039	1.039
LINE MAINST50 138kV-SOUTHBAY 138kV ck1	line SY-MI50 & SY-GRNT 138 ck 1	150	150	1.028	1.012	1.004	
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Los Coches 69kV W Bus	71	71	1.034	1.034	1.06	1.032
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.097	1.209	1.095	1.228
LINE DEL MAR 69kV-PENSQTOS 69kV ck1	Penasquitos 69kV NW Bus	50	50	1.072	1.072		
	PEN-ES 1/2 230KV	50	50	1.013	1.013		
LINE ESCNDIDO 69kV-ASH 69kV ck1	Escondido 69kV SW Bus	120	120	1.007	1.006	1.023	1.005
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line SY-MI51 & SY-MI50 138 ck 1	140	143	1.188	1.097	1.157	1.043
	line SY-MI50 & SY-GRNT 138 ck 1	140	143	1.097	1.017	1.062	
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.003	1.003	1.006	1.006
LINE SAMPSON 69kV-MAIN ST 69kV ck1	Main St 69kV W Bus	129	129	1.01			
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.156	1.134		
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.171	1.171	1.181	1.168
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.369	1.369	1.364	1.367
	POM-SX 1 + 2 69KV	68	76	1.141	1.142	1.142	1.159
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.29	1.289	1.006	1.102

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre0	08ESYNOY Post0	08ESYOOY Pre0	08ESYOOY Post0
LINE CALAVRTP 138kV-CANNON 138kV ck1	PQ-NCW + EA-BQ-PQ 138KV	258	258	1.035			
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	Otay 69kV Bus	55	55			1.116	1.119

Post Processor 08HS MMC 3BD Category B MVA1

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre3	08ESYNOY Post3	08ESYOOY Pre3	08ESYOOY Post3
LINE HARQUAHA 500kV-DEVERS 500kV ck1	line IV-ML 500kV SPS 6.8A	2338.2	2987.7	1.10	1.10	1.10	1.10
	line IV-ML 500kV SPS 6.8B	2338.2	2987.7	1.11	1.11	1.11	1.11
	line IV-ML 500kV SPS 6.8C	2338.2	2987.7	1.11	1.11	1.11	1.11
	line IV-ML 500kV SPS 6.8D	2338.2	2987.7	1.13	1.13	1.13	1.13
LINE BORREGO 69kV-NARROWS 69kV ck1	line SANTYSBL to CREELMAN 69 ck 1	12.5	14.5	1.02	1.02		1.02
	line WARNERS to SANTYSBL 69 ck 1	12.5	14.5	1.04	1.04		1.04
LINE MAINST51 138kV-SOUTHBAY 138kV ck1	line SOUTHBAY to MAINST50 138 ck 1	150	150	1.07	1.06	1.07	1.05
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.42	1.46	1.46	1.47
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.07	1.06		1.03
TRAN MIGUEL 230kV-MIGUELMP 500kV ck1	tran MIGUEL 230 to MIGUEL 500 ck 2	1120	1329	1.07	1.07	1.07	1.07
TRAN MIGUEL 500kV-MIGUELMP 500kV ck1	tran MIGUEL 230 to MIGUEL 500 ck 2	1120	1329	1.07	1.07	1.07	1.06
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV-ML 500kV SPS 6.8A	215	259	1.35	1.35	1.35	1.35
	line IV-ML 500kV SPS 6.8B	215	259	1.41	1.41	1.40	1.41
	line IV-ML 500kV SPS 6.8C	215	259	1.43	1.43	1.43	1.43
	line IV-ML 500kV SPS 6.8D	215	259	1.49	1.49	1.48	1.49
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.02	1.02	1.02	1.02
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136	1.41	1.62	1.43	1.64
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	line SOUTHBAY to SWEETWTR 69 ck 1	157	157		1.08		1.09
LINE BORDER 69kV-BORDERTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	103	103	1.24	1.24	1.24	1.24
LINE OTAYLKTP 69kV-BORDERTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	97	136	1.28	1.28	1.28	1.28
LINE TL649 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.27	1.26	1.23	1.22
LINE POMERADO 69kV-SYCAMORE 69kV ck2	line POMERADO to SYCAMORE 69 ck 1	97	136	1.20	1.20		
LINE POMERADO 69kV-SYCAMORE 69kV ck1	line POMERADO to SYCAMORE 69 ck 2	97	136	1.19	1.20		
TRAN MIGUEL 230kV-MIGUEL 500kV ck2	tran MIGUEL 230 to MIGUELMP 500 ck 1	1120	1344	1.06	1.06	1.06	1.05

Post Processor 08HS MMC 3BD Category C MVA1

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre3	08ESYNOY Post3	08ESYOOY Pre3	08ESYOOY Post3
LINE BORREGO 69kV-NARROWS 69kV ck1	Creelman 69kV E Bus	12.5	14.5	1.02	1.02		1.02
	Santa Ysabel 69kV Bus	12.5	14.5	1.04	1.04		1.04
LINE MAINST51 138kV-SOUTHBAY 138kV ck1	Sweetwater 69kV Bus	150	150	1.07	1.10	1.08	1.10
	line SY-MI50 & SY-GRNT 138 ck 1	150	150	1.25	1.25	1.26	1.25
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	Otay 69kV W Bus	50	50	1.19	1.19		
	Otay 69kV E Bus	50	50	1.09	1.20		
	Miguel 69kV S Bus	50	50	1.42	1.45	1.46	1.47
	Otay 69kV Bus	50	50			1.16	1.16
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136	1.34	1.35	1.36	1.37
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.11	1.09	1.03	1.07
	PEN-ES 1/2 230KV	97	102	1.00			
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIPS SA LOAD	97	129	1.16	1.20	1.28	1.25
	SA5W TRIP TL695	97	129	1.58	1.62	1.70	1.67
LINE TALEGA 69kV-TALEGATP 69kV ck1	SA5W TRIPS SM LOAD	24	24		1.02	1.03	1.04
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIPS SA LOAD	140	160	1.31	1.26	1.20	1.22
	SA5W TRIPS SM LOAD	140	160	1.50	1.46	1.39	1.41
	SA5W TRIP TL695	140	160	1.76	1.72	1.65	1.67
	PQ-NCW + EA-BQ-PQ 138KV	140	160	1.21	1.03		
LINE OCNSDETP 69kV-STUARTTP 69kV ck1	TA-SO 1 + 2 230KV	32	32	1.07	1.06	1.05	1.06
LINE STUARTTP 69kV-LASPULGS 69kV ck1	TA-SO 1 + 2 230KV	32	32	1.02	1.01		1.00
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.04	1.04	1.04	1.04
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.19	1.19	1.19	1.19
	PI-CP + TA-TB 138KV	136	136	1.06	1.06	1.07	1.07
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.10	1.10	1.10	1.10
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.04	1.04	1.04	1.04
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Los Coches 69kV W Bus	71	71	1.04	1.03	1.06	1.03
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	CH-SX-SN+LC-EL 138/69 KV	191	200	1.00	1.01		
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.74	1.94	1.76	1.97
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Southbay 69kV N Bus	157	157		1.08		1.09
LINE DEL MAR 69kV-PENSQTOS 69kV ck1	Penasquitos 69kV NW Bus	50	50	1.08	1.07		
	PEN-ES 1/2 230KV	50	50	1.01	1.01		
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.01	1.00		
LINE ESCNDIDO 69kV-ASH 69kV ck1	Escondido 69kV SW Bus	120	120	1.00	1.00	1.02	1.01

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre3	08ESYNOY Post3	08ESYOOY Pre3	08ESYOOY Post3
LINE BORDER 69kV-BORDERTP 69kV ck1	Miguel 69kV S Bus	103	103	1.24	1.24	1.24	1.24
LINE OTAYLKTP 69kV-BORDERTP 69kV ck1	Miguel 69kV S Bus	97	136	1.28	1.28	1.28	1.28
LINE TL649 69kV-OTAYLKTP 69kV ck1	Miguel 69kV S Bus	50	50	1.26	1.26	1.22	1.21
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.40	1.40	1.31	1.35
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.07	1.07	1.08	1.08
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Escondido 69kV SW Bus	102	113			1.00	
LINE MIGUEL 69kV-JAMACHA 69kV ck1	Jamacha 69kV N Bus	97	136		1.21		
	Miguel 69kV N Bus	97	136	1.31	1.32	1.26	1.26
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.00	1.00	1.01	1.01
LINE B 69kV-MAIN ST 69kV ck2	Main St 69kV W Bus	97	111	1.10	1.15	1.13	1.16
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.13	1.11		
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.23	1.23	1.24	1.23
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97	119	1.18	1.18	1.08	1.06
	ML-JM 1 + 2 69KV	97	119	1.08	1.08		
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.53	1.53	1.52	1.53
	POM-SX 1 + 2 69KV	68	76	1.28	1.28	1.28	1.30
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.29	1.28		1.08
LINE POWAY 69kV-POMERADO 69kV ck1	PEN-ES 1/2 230KV	97	136	1.34	1.35	1.21	1.29
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line SY-MI51 & SY-MI50 138 ck 1	140	143	1.01			
LINE CHOLLAS 69kV-SPRNGVLY 69kV ck1	ML-JM 1 + 2 69KV	97	136	1.21	1.25		
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Penasquitos 69kV SE Bus	97	129	1.13			

Post Processor 08HS MMC 3BDCatagory B MVA2

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre3	08ESYNOY Post3	08ESYOOY Pre3	08ESYOOY Post3
LINE MAINST51 138kV-SOUTHBAY 138kV ck1	line SOUTHBAY to MAINST50 138 ck 1	150	150	1.071	1.058	1.072	1.048
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.416	1.455	1.462	1.466
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.018	1.004		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV-ML 500kV SPS 6.8A	215	259	1.121	1.121	1.119	1.121
	line IV-ML 500kV SPS 6.8B	215	259	1.166	1.166	1.164	1.166
	line IV-ML 500kV SPS 6.8C	215	259	1.187	1.187	1.185	1.187
	line IV-ML 500kV SPS 6.8D	215	259	1.233	1.233	1.231	1.233
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.021	1.019	1.022	1.018
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136	1.007	1.158	1.019	1.169
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	line SOUTHBAY to SWEETWTR 69 ck 1	157	157		1.084		1.094
LINE BORDER 69kV-BORDERTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	103	103	1.242	1.242	1.242	1.241
LINE TL649 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.266	1.258	1.229	1.219

Post Processor 08HS MMC 3BD Category C MVA2

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre3	08ESYNOY Post3	08ESYOOY Pre3	08ESYOOY Post3
LINE MAINST51 138kV-SOUTHBAY 138kV ck1	Sweetwater 69kV Bus	150	150	1.071	1.095	1.082	1.097
	line SY-MI50 & SY-GRNT 138 ck 1	150	150	1.25	1.25	1.26	1.245
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	Otay 69kV W Bus	50	50	1.192	1.192		
	Otay 69kV E Bus	50	50	1.094	1.203		
	Miguel 69kV S Bus	50	50	1.416	1.452	1.462	1.466
	Otay 69kV Bus	50	50			1.155	1.155
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.054	1.04		1.014
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIP TL695	97	129	1.188	1.22	1.276	1.259
LINE TALEGA 69kV-TALEGATP 69kV ck1	SA5W TRIPS SM LOAD	24	24		1.018	1.026	1.039
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIPS SA LOAD	140	160	1.143	1.106	1.046	1.065
	SA5W TRIPS SM LOAD	140	160	1.313	1.276	1.218	1.236
	SA5W TRIP TL695	140	160	1.535	1.502	1.443	1.463
	PQ-NCW + EA-BQ-PQ 138KV	140	160	1.061			
LINE OCNSDETP 69kV-STUARTTP 69kV ck1	TA-SO 1 + 2 230KV	32	32	1.07	1.061	1.054	1.059
LINE STUARTTP 69kV-LASPULGS 69kV ck1	TA-SO 1 + 2 230KV	32	32	1.016	1.006		1.004
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.186	1.186	1.188	1.188
	PI-CP + TA-TB 138KV	136	136	1.063	1.063	1.065	1.065
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.102	1.102	1.104	1.104
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.037	1.037	1.039	1.039
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Los Coches 69kV W Bus	71	71	1.035	1.033	1.059	1.03
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.242	1.38	1.258	1.401
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Southbay 69kV N Bus	157	157		1.078		1.088
LINE DEL MAR 69kV-PENSQTOS 69kV ck1	Penasquitos 69kV NW Bus	50	50	1.077	1.065		
	PEN-ES 1/2 230KV	50	50	1.013	1.008		
LINE ESCNDIDO 69kV-ASH 69kV ck1	Escondido 69kV SW Bus	120	120	1.001	1.004	1.023	1.005
LINE BORDER 69kV-BORDERTP 69kV ck1	Miguel 69kV S Bus	103	103	1.241	1.241	1.241	1.241
LINE TL649 69kV-OTAYLKTP 69kV ck1	Miguel 69kV S Bus	50	50	1.261	1.256	1.22	1.214
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136		1.001		
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.003	1.003	1.005	1.005
LINE B 69kV-MAIN ST 69kV ck2	Main St 69kV W Bus	97	111		1.004		1.009
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.056	1.031		
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.172	1.173	1.182	1.168
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.368	1.368	1.364	1.367

Monitored Element	Contingency Description	MVA1	MVA2	08ESYNOY Pre3	08ESYNOY Post3	08ESYOOY Pre3	08ESYOOY Post3
	POM-SX 1 + 2 69KV	68	76	1.146	1.144	1.141	1.158
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.291	1.277		1.077

Post Processor 10HS MMC EXISTING SY 0BD Category B MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre0	10ESYNOY Post0	10ESYOOY Pre0	10ESYOOY Post0
LINE MESAHGTS 69kV-MISSION 69kV ck1	line KEARNY to MISSION 69 ck 1	97	136	1.27	1.29	1.22	1.23
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line PENSQTOS to MESA RIM 69 ck 1	102	130	1.14	1.16	1.14	1.16
	tran PENSQTOS 230 to PENSQTOS 69 ck 1	102	130		1.09		1.09
	tran PENSQTOS 230 to PENSQTOS 69 ck 2	102	130		1.10		1.09
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.55	1.61	1.55	1.61
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.55	1.61	1.55	1.61
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 2	224	285	1.19	1.21	1.19	1.20
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line MIGUEL to BORDER 69 ck 1	140	143	1.10	1.02	1.09	1.02
	line MISSION to GRNT HLL 138 ck 1	140	143	1.35	1.29	1.33	1.29
	line GRNT HLL to SOUTHBAY 138 ck 1	140	143	1.38	1.32	1.36	1.32
	line CARLTNHS-SANTEE 138	140	143	1.00			
	line LOSCOCHS to SOUTHBAY 138 ck 1	140	143	1.23	1.16	1.22	1.16
	line OLD TOWN to KETTNER 69 ck 1	140	143	1.12	1.05	1.11	1.04
	line CHOLLAS to SWEETWTR 69 ck 1	140	143	1.01			
	line EL CAJON to JAMACHA 69 ck 1	140	143	1.00			
	line SAMPSON to DIVISION 69 ck 1	140	143	1.02		1.00	
	tran MIGUEL 69 to MIGUEL 230 ck 1	140	143	1.20	1.12	1.18	1.12
	tran MIGUEL 69 to MIGUEL 230 ck 2	140	143	1.20	1.12	1.18	1.12
	tran OLD TOWN 69 to OLD TOWN 230 ck 1	140	143	1.10	1.03	1.09	1.03
	tran OLD TOWN 69 to OLD TOWN 230 ck 2	140	143	1.10	1.03	1.09	1.03
	tran SYCAMORE 230 to SYCAMORE 138 ck 1	140	143	1.02		1.01	
	tran LOSCOCHS 138 to LOSCOCHS 69 ck 1	140	143	1.09	1.02	1.08	1.01
	tran LOSCOCHS 69 to LOSCOCHS 138 ck 2	140	143	1.09	1.02	1.07	1.01
	gen OTAY_49 13.80	140	143	1.15		1.13	
	gen SOUTHBY1 15.00	140	143	1.36	1.29	1.35	1.28
	gen DIVISION 69.00	140	143	1.10	1.03	1.09	1.02
	gen OTAY_46A 13.80	140	143		1.07		1.06
	gen OTAY_46B 13.80	140	143		1.07		1.06
	line KETTNER to B 69 ck 1	140	143	1.08		1.07	
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	line MIGUEL to BORDER 69 ck 1	55	55			1.01	
LINE TL649 69kV-OTAYLKTP 69kV ck1	line IMPRLBCH to OTAY TP 69 ck 1	50	50	1.01	1.12		1.05
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.12	1.12	1.12	1.12
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.17	1.18	1.17	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.10	1.10	1.10	1.10

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre0	10ESYNOY Post0	10ESYOOY Pre0	10ESYOOY Post0
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	line MISSION to GRNT HLL 138 ck 1	204.1	204.1	1.03	1.07	1.04	1.07
	line GRNT HLL to SOUTHBAY 138 ck 1	204.1	204.1	1.06	1.10	1.07	1.10
	line CARLTNHS-SANTEE 138	204.1	204.1	1.03	1.04	1.04	1.04
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136	1.37	1.58	1.39	1.61
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	line SOUTHBAY to SWEETWTR 69 ck 1	157	157		1.05		1.07
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	line PENSQTOS to TOREYPNS 69 ck 1	97	129		1.13		1.13
LINE KEARNY 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	97	129	1.20	1.22	1.14	1.16
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.12	1.14	1.12	1.14
LINE POMERADO 69kV-SYCAMORE 69kV ck2	line POMERADO to SYCAMORE 69 ck 1	97	136	1.33	1.36	1.33	1.35
LINE POMERADO 69kV-SYCAMORE 69kV ck1	line POMERADO to SYCAMORE 69 ck 2	97	136	1.33	1.36	1.33	1.35
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck2	tran SYCAMORE 230 to SYCAMORE 69 ck 1	224	269	1.17	1.19	1.17	1.19
TRAN LOSCOCHS 69kV-LOSCOCHS 138kV ck2	tran LOSCOCHS 138 to LOSCOCHS 69 ck 1	140	155	1.15	1.15	1.15	1.15
TRAN LOSCOCHS 138kV-LOSCOCHS 69kV ck1	tran LOSCOCHS 69 to LOSCOCHS 138 ck 2	150	180	1.09	1.08	1.08	1.08
LINE TL6929 69kV-TL6929MN 69kV ck1	tran SOUTHBAY 69 to SOUTHBAY 138 ck 1	64	64				1.44
	gen SOUTHBY1 15.00	64	64				1.44
LINE CLAIRMNT 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	50	50			1.03	1.05

Post Processor 10HS MMC EXISTING SY 0BD Category C MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre0	10ESYNOY Post0	10ESYOOY Pre0	10ESYOOY Post0
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136			1.49	1.51
	Kearny 69kV E Bus	97	136	1.27	1.29	1.22	1.23
LINE POWAY 69kV-POMERADO 69kV ck1	SX-PEN + PEN-EA-SA 230KV	97	136		1.20		
	PEN-ES 1/2 230KV	97	136	1.38	1.39	1.38	1.36
	SX-PEN 230KV + BE-AR 69KV	97	136		1.20		
	SX-PEN 230KV + AR-SX 69KV	97	136	1.23	1.30	1.24	1.27
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	102	130	1.10	1.14	1.10	1.13
	Penasquitos 69kV SE Bus	102	130	1.13	1.15	1.13	1.15
	POM-SX 1 + 2 69KV	102	130	1.10	1.13	1.10	1.12
	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.45	1.47	1.45	1.46
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	PEN-ES 1/2 230KV	456	577	1.20	1.22	1.20	1.21
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	PEN-ES 1/2 230KV	456	577	1.20	1.22	1.20	1.21
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Otay 69kV W Bus	140	143	1.10	1.11		
	Otay 69kV E Bus	140	143	1.02			
	ML BK71 & Miguel - Mission #1 230 kV	140	143	1.22	1.15	1.20	1.14
	El Cajon 69kV S Bus	140	143	1.00			
	Jamacha 69kV S Bus	140	143	1.02		1.01	
	Los Coches 69kV E Bus	140	143	1.09	1.03	1.08	1.02
	Los Coches 69kV W Bus	140	143	1.12	1.05	1.10	1.04
	Miguel 69kV N Bus	140	143	1.01			
	Miguel 69kV S Bus	140	143	1.32	1.23	1.31	1.23
	Murray 69kV N Bus	140	143	1.13	1.06	1.11	1.05
	CH-SX-SN 138KV + SAN VCNT-EL 69KV	140	143	1.00			
	LC-SY + SY-TC 138KV	140	143	1.36	1.29	1.35	1.28
	LC-SY+ML-LC 138/69KV	140	143	1.21	1.14	1.20	1.13
	PV-TC + LC-SY 138KV	140	143	1.23	1.16	1.22	1.15
	Station B 69kV N Bus	140	143	1.08		1.07	
	Otay 69kV Bus	140	143				1.06
	El Cajon 69kV N Bus	140	143			1.07	
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	Miguel 69kV S Bus	55	55			1.01	
	Sweetwater 69kV Bus	55	55			1.10	1.11
	Southbay 69kV S Bus	55	55			1.09	
	Otay 69kV Bus	55	55			1.33	1.33
LINE TL649 69kV-OTAYLKTP 69kV ck1	Otay 69kV E Bus	50	50		1.10		

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre0	10ESYNOY Post0	10ESYOOY Pre0	10ESYOOY Post0
	Sweetwater 69kV Bus	50	50	1.13	1.33		1.15
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.09	1.09	1.09	1.09
	Los Coches 69kV W Bus	71	71	1.13	1.14	1.13	1.13
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.19	1.14	1.18	1.13
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.14	1.14	1.14	1.14
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.27	1.27	1.27	1.27
	PI-CP + TA-TB 138KV	136	136	1.13	1.13	1.13	1.13
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	PEN-ES 1/2 230KV	63	73	1.12	1.04	1.11	1.02
	CAN-SA-SH + EA-CAN 138KV	63	73	1.17	1.18	1.17	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	PEN-ES 1/2 230KV	63	73	1.12	1.04	1.11	1.02
	CAN-SA-SH + EA-CAN 138KV	63	73	1.10	1.10	1.10	1.10
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.17	1.17	1.17	1.17
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.11	1.11	1.11	1.11
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	CH-SX-SN 138KV + SAN VCNT-EL 69KV	204.1	204.1	1.03	1.04	1.04	1.04
	CH-SX-SN+LC-EL 138/69 KV	204.1	204.1	1.07	1.07	1.07	1.08
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.30	1.27	1.30	1.28
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.73	1.93	1.75	1.97
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Southbay 69kV N Bus	157	157		1.07		1.08
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	97	129	1.13	1.14	1.13	1.14
	Penasquitos 69kV SE Bus	97	129	1.14	1.14	1.14	1.14
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Miramar 69kV E Bus	97	102	1.00			
	Penasquitos 69kV SE Bus	97	102	1.13	1.10	1.10	1.08
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.30	1.27	1.28	1.26
LINE KEARNY 69kV-MISSION 69kV ck1	Mission 69kV S Bus	97	129	1.21	1.23	1.16	1.17
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.05	1.07	1.05	1.07
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.15	1.17	1.15	1.18
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.57	1.61	1.57	1.59
TRAN LOSCOCHS 69kV-LOSCOCHS 138kV ck2	Los Coches 69kV W Bus	140	155	1.04	1.04	1.04	1.04
TRAN LOSCOCHS 138kV-LOSCOCHS 69kV ck1	Los Coches 69kV E Bus	150	180	1.07	1.06	1.07	1.06
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.11	1.11	1.11	1.11
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.01	1.01	1.01	1.01
LINE MIGUEL 69kV-JAMACHA 69kV ck1	Miguel 69kV N Bus	97	136	1.20	1.23	1.20	1.22
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.03	1.02	1.03	1.03
LINE B 69kV-MAIN ST 69kV ck2	Main St 69kV W Bus	97	111	1.02	1.06	1.02	1.05

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre0	10ESYNOY Post0	10ESYOOY Pre0	10ESYOOY Post0
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.26	1.26	1.26	1.27
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97.5	136.8	1.21	1.21	1.22	1.22
LINE MURRAY 69kV-GARFIELD 69kV ck1	Murray 69kV N Bus	97	103				1.00
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.53	1.53	1.53	1.54
	POM-SX 1 + 2 69KV	68	76	1.34	1.35	1.34	1.34
LINE SANYSDRO 69kV-OTAY TP 69kV ck1	Sweetwater 69kV Bus	50	50				1.04
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.00		1.01	
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.02	1.02	1.02	1.02
LINE CHOLLAS 69kV-SPRNGVLY 69kV ck1	ML-JM 1 + 2 69KV	97	136		1.20		1.20
LINE STUART 69kV-STUARTTP 69kV ck1	Penasquitos 69kV SE Bus	4	4	2.17			
	Descanso 69kV Bus	4	4				1.93
LINE TL6929 69kV-TL6929MN 69kV ck1	Miguel 69kV S Bus	64	64				1.45
LINE CLAIRMNT 69kV-MISSION 69kV ck1	Mission 69kV S Bus	50	50			1.05	1.07

Post Processor 10HS MMC EXISTING SY 0BD Category B MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre0	10ESYNOY Post0	10ESYOOY Pre0	10ESYOOY Post0
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.225	1.275	1.227	1.272
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.225	1.275	1.227	1.272
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line MIGUEL to BORDER 69 ck 1	140	143	1.073		1.069	
	line MISSION to GRNT HLL 138 ck 1	140	143	1.319	1.266	1.305	1.258
	line GRNT HLL to SOUTHBAY 138 ck 1	140	143	1.349	1.296	1.335	1.288
	line LOSCOCHS to SOUTHBAY 138 ck 1	140	143	1.203	1.138	1.19	1.13
	line OLD TOWN to KETTNER 69 ck 1	140	143	1.1	1.024	1.088	1.018
	tran MIGUEL 69 to MIGUEL 230 ck 1	140	143	1.17	1.099	1.158	1.094
	tran MIGUEL 69 to MIGUEL 230 ck 2	140	143	1.17	1.099	1.158	1.094
	tran OLD TOWN 69 to OLD TOWN 230 ck 1	140	143	1.08	1.012	1.067	1.004
	tran OLD TOWN 69 to OLD TOWN 230 ck 2	140	143	1.08	1.012	1.067	1.004
	tran LOSCOCHS 138 to LOSCOCHS 69 ck 1	140	143	1.066		1.052	
	tran LOSCOCHS 69 to LOSCOCHS 138 ck 2	140	143	1.065		1.051	
	gen OTAY_49 13.80	140	143	1.123		1.11	
	gen SOUTHBY1 15.00	140	143	1.33	1.258	1.317	1.251
	gen DIVISION 69.00	140	143	1.076	1.009	1.063	1.001
	gen OTAY_46A 13.80	140	143		1.046		1.038
	gen OTAY_46B 13.80	140	143		1.046		1.038
	line KETTNER to B 69 ck 1	140	143	1.055		1.043	
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	line MIGUEL to BORDER 69 ck 1	55	55			1.005	
LINE TL649 69kV-OTAYLKTP 69kV ck1	line IMPRLBCH to OTAY TP 69 ck 1	50	50	1.006	1.12		1.052
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.116	1.12	1.117	1.119
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.013	1.015	1.013	1.015
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	line MISSION to GRNT HLL 138 ck 1	204.1	204.1	1.033	1.067	1.036	1.07
	line GRNT HLL to SOUTHBAY 138 ck 1	204.1	204.1	1.062	1.096	1.065	1.099
	line CARLTNHS-SANTEE 138	204.1	204.1	1.034	1.042	1.036	1.044
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136		1.128		1.15
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	line SOUTHBAY to SWEETWTR 69 ck 1	157	157		1.049		1.07
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.066	1.08	1.065	1.086
TRAN LOSCOCHS 69kV-LOSCOCHS 138kV ck2	tran LOSCOCHS 138 to LOSCOCHS 69 ck 1	140	155	1.042	1.036	1.041	1.035
LINE TL6929 69kV-TL6929MN 69kV ck1	tran SOUTHBAY 69 to SOUTHBAY 138 ck 1	64	64				1.44
	gen SOUTHBY1 15.00	64	64				1.442
LINE CLAIRMNT 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	50	50			1.032	1.052

Post Processor 10HS MMC EXISTING SY 0BD Category C MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre0	10ESYNOY Post0	10ESYOOY Pre0	10ESYOOY Post0
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136			1.065	1.078
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.135	1.152	1.134	1.149
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Otay 69kV W Bus	140	143	1.077	1.088		
	ML BK71 & Miguel - Mission #1 230 kV	140	143	1.191	1.121	1.178	1.115
	Los Coches 69kV E Bus	140	143	1.071	1.003	1.058	
	Los Coches 69kV W Bus	140	143	1.094	1.025	1.081	1.018
	Miguel 69kV S Bus	140	143	1.289	1.2	1.284	1.207
	Murray 69kV N Bus	140	143	1.104	1.034	1.091	1.027
	LC-SY + SY-TC 138KV	140	143	1.333	1.265	1.32	1.257
	LC-SY+ML-LC 138/69KV	140	143	1.183	1.117	1.17	1.11
	PV-TC + LC-SY 138KV	140	143	1.205	1.139	1.19	1.129
	Station B 69kV N Bus	140	143	1.057		1.045	
	Otay 69kV Bus	140	143				1.04
	El Cajon 69kV N Bus	140	143			1.048	
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	Miguel 69kV S Bus	55	55			1.008	
	Sweetwater 69kV Bus	55	55			1.104	1.112
	Southbay 69kV S Bus	55	55			1.089	
	Otay 69kV Bus	55	55			1.332	1.326
LINE TL649 69kV-OTAYLKTP 69kV ck1	Otay 69kV E Bus	50	50		1.096		
	Sweetwater 69kV Bus	50	50	1.13	1.326		1.151
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.091	1.094	1.091	1.094
	Los Coches 69kV W Bus	71	71	1.129	1.135	1.13	1.133
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.187	1.138	1.181	1.127
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.066	1.066	1.066	1.065
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.274	1.273	1.274	1.273
	PI-CP + TA-TB 138KV	136	136	1.132	1.131	1.132	1.131
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	CAN-SA-SH + EA-CAN 138KV	63	73	1.013	1.015	1.013	1.015
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.168	1.167	1.168	1.167
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.111	1.111	1.112	1.111
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	CH-SX-SN 138KV + SAN VCNT-EL 69KV	204.1	204.1	1.034	1.042	1.036	1.044
	CH-SX-SN+LC-EL 138/69 KV	204.1	204.1	1.068	1.074	1.07	1.077
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.209	1.182	1.214	1.194
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.233	1.376	1.251	1.404

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre0	10ESYNOY Post0	10ESYOOY Pre0	10ESYOOY Post0
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Southbay 69kV N Bus	157	157		1.067		1.077
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Penasquitos 69kV SE Bus	97	102	1.071	1.043	1.046	1.029
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.233	1.209	1.218	1.202
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.001	1.012		1.017
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.097	1.111	1.096	1.117
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.117	1.147	1.119	1.135
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.023	1.028	1.024	1.029
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.01	1.011	1.01	1.011
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.195	1.2	1.198	1.204
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.369	1.373	1.37	1.373
	POM-SX 1 + 2 69KV	68	76	1.195	1.206	1.197	1.201
LINE SANYSDRO 69kV-OTAY TP 69kV ck1	Sweetwater 69kV Bus	50	50				1.043
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.004		1.008	
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.015	1.015	1.015	1.015
LINE STUART 69kV-STUARTTP 69kV ck1	Penasquitos 69kV SE Bus	4	4	2.168			
	Descanso 69kV Bus	4	4				1.931
LINE TL6929 69kV-TL6929MN 69kV ck1	Miguel 69kV S Bus	64	64				1.445
LINE CLAIRMNT 69kV-MISSION 69kV ck1	Mission 69kV S Bus	50	50			1.048	1.066

Post Processor 10HS MMC EXISTING SY 3BD Category B MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre3	10ESYNOY Post3	10ESYOOY Pre3	10ESYOOY Post3
LINE MESAHGTS 69kV-MISSION 69kV ck1	line KEARNY to MISSION 69 ck 1	97	136	1.28	1.29	1.22	1.24
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136	1.65	1.87	1.66	1.88
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line PENSQTOS to MESA RIM 69 ck 1	102	130	1.14	1.16	1.13	1.16
	tran PENSQTOS 230 to PENSQTOS 69 ck 1	102	130		1.09		1.09
	tran PENSQTOS 230 to PENSQTOS 69 ck 2	102	130		1.10		1.09
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.55	1.61	1.55	1.62
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.55	1.61	1.55	1.62
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 2	224	285	1.18	1.20	1.18	1.20
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.13	1.16	1.14	1.14
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line MIGUEL to BORDER 69 ck 1	140	143	1.09	1.01	1.10	1.02
	line MISSION to GRNT HLL 138 ck 1	140	143	1.21	1.15	1.20	1.15
	line GRNT HLL to SOUTHBAY 138 ck 1	140	143	1.24	1.18	1.23	1.18
	line LOSCOCHS to SOUTHBAY 138 ck 1	140	143	1.07	1.01	1.07	1.01
	tran MIGUEL 69 to MIGUEL 230 ck 1	140	143	1.02		1.01	
	tran MIGUEL 69 to MIGUEL 230 ck 2	140	143	1.02		1.01	
	gen SOUTHBY1 15.00	140	143	1.20	1.13	1.20	1.13
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.11	1.11	1.11	1.11
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.17	1.18	1.17	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.10	1.10	1.10	1.10
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	line SOUTHBAY to SWEETWTR 69 ck 1	157	157	1.10	1.24	1.10	1.25
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	line MISSION to GRNT HLL 138 ck 1	204.1	204.1	1.07	1.10	1.06	1.10
	line GRNT HLL to SOUTHBAY 138 ck 1	204.1	204.1	1.09	1.13	1.09	1.13
	line CARLTNHS-SANTEE 138	204.1	204.1	1.03	1.04	1.03	1.03
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	line PENSQTOS to TOREYPNS 69 ck 1	97	129		1.13		1.13
LINE KEARNY 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	97	129	1.21	1.22	1.15	1.17
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.12	1.14	1.12	1.14
LINE POMERADO 69kV-SYCAMORE 69kV ck2	line POMERADO to SYCAMORE 69 ck 1	97	136	1.33	1.37	1.33	1.37
LINE POMERADO 69kV-SYCAMORE 69kV ck1	line POMERADO to SYCAMORE 69 ck 2	97	136	1.33	1.36	1.33	1.37
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck2	tran SYCAMORE 230 to SYCAMORE 69 ck 1	224	269	1.16	1.18	1.16	1.18
TRAN LOSCOCHS 69kV-LOSCOCHS 138kV ck2	tran LOSCOCHS 138 to LOSCOCHS 69 ck 1	140	155	1.12	1.12	1.12	1.12
TRAN LOSCOCHS 138kV-LOSCOCHS 69kV ck1	tran LOSCOCHS 69 to LOSCOCHS 138 ck 2	150	180	1.06	1.05	1.06	1.05
LINE TL6929 69kV-TL6929MN 69kV ck1	tran SOUTHBAY 69 to SOUTHBAY 138 ck 1	64	64				1.43

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre3	10ESYNOY Post3	10ESYOOY Pre3	10ESYOOY Post3
	gen SOUTHBY1 15.00	64	64				1.44
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	line MIGUEL to BORDER 69 ck 1	55	55			1.01	
LINE CLAIRMNT 69kV-MISSION 69kV ck1	line PACFCBCH to OLD TOWN 69 ck 1	50	50				1.01
	line MESAHGTS to MISSION 69 ck 1	50	50			1.04	1.07

Post Processor 10HS MMC EXISTING SY 3BD Category C MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre3	10ESYNOY Post3	10ESYOOY Pre3	10ESYOOY Post3
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136			1.50	1.52
	Kearny 69kV E Bus	97	136	1.28	1.29	1.22	1.24
LINE POWAY 69kV-POMERADO 69kV ck1	SX-PEN + PEN-EA-SA 230KV	97	136		1.20		1.20
	PEN-ES 1/2 230KV	97	136	1.38	1.39	1.38	1.39
	SX-PEN 230KV + BE-AR 69KV	97	136		1.20		1.20
	SX-PEN 230KV + AR-SX 69KV	97	136	1.24	1.30	1.24	1.31
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.99	2.20	2.01	2.22
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	102	130	1.11	1.13	1.10	1.13
	Penasquitos 69kV SE Bus	102	130	1.13	1.15	1.12	1.15
	POM-SX 1 + 2 69KV	102	130	1.10	1.13	1.10	1.13
	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.45	1.47	1.44	1.46
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	PEN-ES 1/2 230KV	456	577	1.20	1.21	1.20	1.22
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	PEN-ES 1/2 230KV	456	577	1.20	1.21	1.20	1.22
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	Otay 69kV E Bus	50	50		1.08		
	Miguel 69kV S Bus	50	50	1.13	1.16	1.14	1.14
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	ML BK71 & Miguel - Mission #1 230 kV	140	143	1.04		1.03	
	Miguel 69kV S Bus	140	143	1.01		1.01	
	LC-SY + SY-TC 138KV	140	143	1.22	1.15	1.21	1.15
	LC-SY+ML-LC 138/69KV	140	143	1.05		1.05	
	PV-TC + LC-SY 138KV	140	143	1.09	1.02	1.08	1.02
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.18	1.14	1.18	1.14
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.09	1.09	1.09	1.09
	Los Coches 69kV W Bus	71	71	1.13	1.13	1.13	1.13
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.14	1.14	1.14	1.14
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.27	1.27	1.27	1.27
	PI-CP + TA-TB 138KV	136	136	1.13	1.13	1.13	1.13
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	PEN-ES 1/2 230KV	63	73	1.11	1.04	1.11	1.04
	CAN-SA-SH + EA-CAN 138KV	63	73	1.17	1.18	1.17	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	PEN-ES 1/2 230KV	63	73	1.11	1.04	1.11	1.04
	CAN-SA-SH + EA-CAN 138KV	63	73	1.10	1.10	1.10	1.10
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.17	1.17	1.17	1.17
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.11	1.11	1.11	1.11
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Miguel 69kV S Bus	157	157		1.01		1.01
	Southbay 69kV N Bus	157	157	1.10	1.24	1.11	1.25

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre3	10ESYNOY Post3	10ESYOOY Pre3	10ESYOOY Post3
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	CH-SX-SN 138KV + SAN VCNT-EL 69KV	204.1	204.1	1.03	1.04	1.03	1.03
	CH-SX-SN+LC-EL 138/69 KV	204.1	204.1	1.06	1.06	1.06	1.06
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	97	129	1.13	1.14	1.13	1.14
	Penasquitos 69kV SE Bus	97	129	1.14	1.14	1.14	1.14
LINE DEL MAR 69kV-PENSQTOS 69kV ck1	Penasquitos 69kV NW Bus	50	50				1.00
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Penasquitos 69kV SE Bus	97	102	1.11	1.08	1.08	1.06
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.28	1.26	1.27	1.25
LINE KEARNY 69kV-MISSION 69kV ck1	Mission 69kV S Bus	97	129	1.22	1.23	1.16	1.18
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.05	1.07	1.05	1.06
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.15	1.17	1.15	1.17
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.57	1.61	1.57	1.61
TRAN LOSCOCHS 69kV-LOSCOCHS 138kV ck2	Los Coches 69kV W Bus	140	155	1.04	1.04	1.04	1.04
TRAN LOSCOCHS 138kV-LOSCOCHS 69kV ck1	Los Coches 69kV E Bus	150	180	1.05	1.05	1.05	1.05
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.11	1.11	1.11	1.11
LINE MIGUEL 69kV-JAMACHA 69kV ck1	Jamacha 69kV N Bus	97	136	1.20	1.23	1.19	1.22
	Miguel 69kV N Bus	97	136	1.31	1.33	1.30	1.33
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.01	1.01	1.01	1.01
LINE B 69kV-MAIN ST 69kV ck2	Main St 69kV W Bus	97	111	1.09	1.13	1.09	1.13
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.19	1.16	1.19	1.17
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.26	1.26	1.26	1.26
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97.5	136.8	1.20	1.20	1.20	1.20
LINE MURRAY 69kV-GARFIELD 69kV ck1	Murray 69kV N Bus	97	103		1.00		1.00
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.53	1.54	1.53	1.54
	POM-SX 1 + 2 69KV	68	76	1.34	1.35	1.34	1.35
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.01		1.01	
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.02	1.02	1.02	1.02
LINE GRNT HLL 138kV-SOUTHBAY 138kV ck1	LC-SY + SY-TC 138KV	310	434		1.23		1.23
LINE CHOLLAS 69kV-SPRNGVLY 69kV ck1	ML-JM 1 + 2 69KV	97	136	1.24	1.27	1.23	1.27
LINE TL6929 69kV-TL6929MN 69kV ck1	Miguel 69kV S Bus	64	64				1.44
LINE CLAIRMNT 69kV-MISSION 69kV ck1	Mission 69kV S Bus	50	50			1.06	1.08

Post Processor 10HS MMC EXISTING SY 3BD Category B MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre3	10ESYNOY Post3	10ESYOOY Pre3	10ESYOOY Post3
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136	1.177	1.333	1.183	1.342
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.228	1.276	1.226	1.276
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.228	1.276	1.226	1.276
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.129	1.164	1.137	1.141
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line MIGUEL to BORDER 69 ck 1	140	143	1.069		1.074	
	line MISSION to GRNT HLL 138 ck 1	140	143	1.18	1.129	1.176	1.125
	line GRNT HLL to SOUTHBAY 138 ck 1	140	143	1.209	1.158	1.206	1.154
	line LOSCOCHS to SOUTHBAY 138 ck 1	140	143	1.05		1.047	
	gen SOUTHBY1 15.00	140	143	1.178	1.11	1.174	1.105
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.108	1.111	1.107	1.111
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.013	1.015	1.013	1.015
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	line SOUTHBAY to SWEETWTR 69 ck 1	157	157	1.095	1.242	1.1	1.25
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	line MISSION to GRNT HLL 138 ck 1	204.1	204.1	1.065	1.097	1.064	1.096
	line GRNT HLL to SOUTHBAY 138 ck 1	204.1	204.1	1.094	1.126	1.093	1.126
	line CARLTNHS-SANTEE 138	204.1	204.1	1.027	1.035	1.026	1.034
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.065	1.081	1.065	1.08
TRAN LOSCOCHS 69kV-LOSCOCHS 138kV ck2	tran LOSCOCHS 138 to LOSCOCHS 69 ck 1	140	155	1.014	1.009	1.013	1.008
LINE TL6929 69kV-TL6929MN 69kV ck1	tran SOUTHBAY 69 to SOUTHBAY 138 ck 1	64	64				1.433
	gen SOUTHBY1 15.00	64	64				1.437
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	line MIGUEL to BORDER 69 ck 1	55	55			1.005	
LINE CLAIRMNT 69kV-MISSION 69kV ck1	line PACFCBCH to OLD TOWN 69 ck 1	50	50				1.005
	line MESAHGTS to MISSION 69 ck 1	50	50			1.043	1.065

Post Processor 10HS MMC EXISTING SY 3BD Category C MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre3	10ESYNOY Post3	10ESYOOY Pre3	10ESYOOY Post3
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136			1.07	1.085
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.421	1.566	1.431	1.582
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.136	1.151	1.132	1.147
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	Otay 69kV E Bus	50	50		1.083		
	Miguel 69kV S Bus	50	50	1.128	1.161	1.137	1.141
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	ML BK71 & Miguel - Mission #1 230 kV	140	143	1.015		1.012	
	LC-SY + SY-TC 138KV	140	143	1.19	1.125	1.188	1.123
	LC-SY+ML-LC 138/69KV	140	143	1.027		1.024	
	PV-TC + LC-SY 138KV	140	143	1.063	1.002	1.061	
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.181	1.138	1.18	1.139
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.091	1.094	1.091	1.094
	Los Coches 69kV W Bus	71	71	1.127	1.131	1.126	1.132
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.066	1.066	1.066	1.066
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.274	1.273	1.274	1.273
	PI-CP + TA-TB 138KV	136	136	1.132	1.131	1.132	1.131
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	CAN-SA-SH + EA-CAN 138KV	63	73	1.013	1.015	1.013	1.015
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.168	1.167	1.168	1.167
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.112	1.111	1.111	1.111
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Miguel 69kV S Bus	157	157		1.011		1.01
	Southbay 69kV N Bus	157	157	1.103	1.24	1.106	1.245
LINE LOSCOCHS 138kV-SOUTHBAY 138kV ck1	CH-SX-SN 138KV + SAN VCNT-EL 69KV	204.1	204.1	1.027	1.035	1.026	1.034
	CH-SX-SN+LC-EL 138/69 KV	204.1	204.1	1.057	1.063	1.057	1.063
LINE DEL MAR 69kV-PENSQTOS 69kV ck1	Penasquitos 69kV NW Bus	50	50				1.002
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Penasquitos 69kV SE Bus	97	102	1.054	1.03	1.03	1.006
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.221	1.201	1.207	1.186
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102		1.013		1.012
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.096	1.112	1.096	1.111
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.119	1.146	1.118	1.147
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.024	1.029	1.023	1.028
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.01	1.011	1.009	1.011
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.11	1.085	1.11	1.087

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre3	10ESYNOY Post3	10ESYOOY Pre3	10ESYOOY Post3
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.197	1.202	1.197	1.202
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.369	1.373	1.369	1.373
	POM-SX 1 + 2 69KV	68	76	1.197	1.207	1.197	1.208
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.006		1.01	
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.015	1.015	1.015	1.015
LINE TL6929 69kV-TL6929MN 69kV ck1	Miguel 69kV S Bus	64	64				1.439
LINE CLAIRMNT 69kV-MISSION 69kV ck1	Mission 69kV S Bus	50	50			1.057	1.078

Post Processor 10HS MMC SY230 0BD Category B MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre0	10SY230NOY Post0	10SY230OOY Pre0	10SY230OOY Post0
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line PENSQTOS to MESA RIM 69 ck 1	102	130	1.17	1.17	1.17	1.17
	tran PENSQTOS 230 to PENSQTOS 69 ck 1	102	130	1.10	1.09	1.10	1.09
	tran PENSQTOS 230 to PENSQTOS 69 ck 2	102	130	1.10	1.10	1.10	1.10
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.55	1.55	1.55	1.54
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.55	1.55	1.55	1.54
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.12	1.11	1.12	1.11
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	line MIGUEL to BORDER 69 ck 1	55	55			1.02	
LINE TL649 69kV-OTAYLKTP 69kV ck1	line IMPRLBCH to OTAY TP 69 ck 1	50	50		1.00		
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.18	1.18	1.18	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.10	1.10	1.10	1.10
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	line PENSQTOS to MESA RIM 69 ck 1	97	102	1.03	1.03	1.03	1.03
	line SYCAMORE to SCRIPPS 69 ck 1	97	102	1.03	1.02	1.02	1.02
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	line GRANITE to GRANITTP 69 ck 1	55	59	1.21	1.19	1.21	1.19
LINE MESAHGTS 69kV-MISSION 69kV ck1	line KEARNY to MISSION 69 ck 1	97	136	1.23	1.24	1.23	1.24
LINE KEARNY 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	97	129	1.16	1.17	1.16	1.17
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.12	1.12	1.12	1.12
LINE POMERADO 69kV-SYCAMORE 69kV ck2	line POMERADO to SYCAMORE 69 ck 1	97	136	1.28	1.28	1.28	1.28
LINE POMERADO 69kV-SYCAMORE 69kV ck1	line POMERADO to SYCAMORE 69 ck 2	97	136	1.27	1.27	1.27	1.27
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck2	tran SYCAMORE 230 to SYCAMORE 69 ck 1	224	269	1.18	1.18	1.19	1.18
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 2	224	285	1.20	1.19	1.20	1.19
LINE STUART 69kV-STUARTTP 69kV ck1	line BOLVRDTP to CAMERON 69 ck 1	4	4	2.07			

Post Processor 10HS MMC SY230 0BD Category C MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre0	10SY230NOY Post0	10SY230OOY Pre0	10SY230OOY Post0
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97.5	136.8	1.27	1.27	1.27	1.27
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	102	130	1.13	1.12	1.13	1.12
	Penasquitos 69kV SE Bus	102	130	1.16	1.15	1.16	1.16
	Sycamore 69kV S Bus	102	130	1.09	1.09	1.10	1.09
	EA-BQ-PQ 138KV + MR-PQ 69KV	102	130	1.09	1.09	1.09	1.09
	POM-SX 1 + 2 69KV	102	130	1.12	1.12	1.13	1.12
	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.48	1.48	1.48	1.48
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	PEN-ES 1/2 230KV	456	577	1.21	1.20	1.21	1.20
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	PEN-ES 1/2 230KV	456	577	1.21	1.20	1.21	1.20
LINE TL6929 69kV-OTAY_93 69kV ck1	Miguel 69kV S Bus	64	64		1.46		
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.10	1.10	1.10	1.10
	Los Coches 69kV W Bus	71	71	1.10	1.10	1.10	1.10
	CH-SX-SN+LC-EL 138/69 KV	71	71	1.01		1.01	
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	Miguel 69kV S Bus	55	55			1.03	
	Southbay 69kV S Bus	55	55			1.02	
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.21	1.21	1.20	1.20
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.14	1.14	1.14	1.14
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.28	1.27	1.28	1.27
	PI-CP + TA-TB 138KV	136	136	1.13	1.13	1.13	1.13
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	PEN-ES 1/2 230KV	63	73	1.15	1.15	1.13	1.14
	CAN-SA-SH + EA-CAN 138KV	63	73	1.18	1.18	1.18	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	PEN-ES 1/2 230KV	63	73	1.15	1.14	1.12	1.13
	CAN-SA-SH + EA-CAN 138KV	63	73	1.10	1.10	1.10	1.10
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.17	1.17	1.17	1.17
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.11	1.11	1.11	1.11
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Miramar 69kV E Bus	97	102	1.07	1.07	1.07	1.07
	Penasquitos 69kV SE Bus	97	102	1.22	1.21	1.21	1.21
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.36	1.35	1.35	1.35
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	El Cajon 69kV S Bus	55	59	1.01	1.01	1.01	1.01
	Murray 69kV N Bus	55	59	1.51	1.49	1.51	1.49
	ML-JM 1 + 2 69KV	55	59	1.05	1.04	1.05	1.04

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre0	10SY230NOY Post0	10SY230OOY Pre0	10SY230OOY Post0
LINE MESAHGTS 69kV-MISSION 69kV ck1	Kearny 69kV E Bus	97	136	1.23	1.24	1.23	1.24
LINE KEARNY 69kV-MISSION 69kV ck1	Mission 69kV S Bus	97	129	1.17	1.17	1.17	1.17
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.05	1.06	1.05	1.06
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.15	1.16	1.15	1.16
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.51	1.51	1.51	1.51
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.11	1.12	1.11	1.12
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	97	129	1.14	1.14	1.14	1.14
	Penasquitos 69kV SE Bus	97	129		1.13		1.13
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.01	1.01	1.01	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	68	68		1.00		1.00
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	Miguel 69kV S Bus	97	100	1.02		1.03	
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.06	1.04	1.06	1.05
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.28	1.28	1.28	1.28
LINE MURRAY 69kV-GARFIELD 69kV ck1	Murray 69kV N Bus	97	103	1.01	1.01	1.01	1.01
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.54	1.54	1.54	1.54
	POM-SX 1 + 2 69KV	68	76	1.31	1.31	1.31	1.31
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.26	1.41	1.28	1.44
LINE POWAY 69kV-POMERADO 69kV ck1	PEN-ES 1/2 230KV	97	136	1.33	1.33	1.34	1.33
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.02	1.02	1.02	1.02

Post Processor 10HS MMC SY230 0BD Category B MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre0	10SY230NOY Post0	10SY230OOY Pre0	10SY230OOY Post0
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.223	1.223	1.221	1.218
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.223	1.223	1.221	1.218
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.116	1.111	1.117	1.112
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	line MIGUEL to BORDER 69 ck 1	55	55			1.017	
LINE TL649 69kV-OTAYLKTP 69kV ck1	line IMPRLBCH to OTAY TP 69 ck 1	50	50		1.003		
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.016	1.017	1.016	1.017
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	line GRANITE to GRANITTP 69 ck 1	55	59	1.127	1.105	1.127	1.109
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.062	1.069	1.061	1.068
LINE STUART 69kV-STUARTTP 69kV ck1	line BOLVRDTP to CAMERON 69 ck 1	4	4	2.074			

Post Processor 10HS MMC SY230 0BD Category C MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre0	10SY230NOY Post0	10SY230OOY Pre0	10SY230OOY Post0
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.16	1.16	1.162	1.161
LINE TL6929 69kV-OTAY_93 69kV ck1	Miguel 69kV S Bus	64	64		1.46		
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.095	1.096	1.095	1.096
	Los Coches 69kV W Bus	71	71	1.104	1.099	1.104	1.1
	CH-SX-SN+LC-EL 138/69 KV	71	71	1.006		1.006	
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	Miguel 69kV S Bus	55	55			1.025	
	Southbay 69kV S Bus	55	55			1.022	
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.208	1.207	1.195	1.203
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.067	1.066	1.067	1.066
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.275	1.274	1.275	1.274
	PI-CP + TA-TB 138KV	136	136	1.133	1.132	1.132	1.132
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	CAN-SA-SH + EA-CAN 138KV	63	73	1.016	1.017	1.016	1.017
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.169	1.168	1.169	1.168
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.112	1.112	1.112	1.112
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Miramar 69kV E Bus	97	102	1.017	1.013	1.014	1.013
	Penasquitos 69kV SE Bus	97	102	1.156	1.151	1.151	1.15
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.289	1.287	1.284	1.287
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.409	1.385	1.411	1.391
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102		1.004		1.003
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.093	1.1	1.092	1.099
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.079	1.078	1.08	1.079
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.03	1.033	1.03	1.033
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.013	1.013	1.013	1.014
LINE PALA 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	68	68		1.001		1.001
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.009		1.01	
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.214	1.215	1.215	1.217
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.376	1.377	1.376	1.378
	POM-SX 1 + 2 69KV	68	76	1.172	1.173	1.172	1.173
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136		1.005		1.024
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.016	1.015	1.016	1.016

Post Processor 10HS MMC SY230 3BD Category B MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre3	10SY230NOY Post3	10SY230OOY Pre3	10SY230OOY Post3
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line PENSQTOS to MESA RIM 69 ck 1	102	130	1.18	1.18	1.17	1.16
	line MIRAMAR to PENSQTOS 69 ck 1	102	130	1.09			
	tran PENSQTOS 230 to PENSQTOS 69 ck 1	102	130	1.11	1.11	1.09	1.09
	tran PENSQTOS 230 to PENSQTOS 69 ck 2	102	130	1.11	1.11	1.10	1.09
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.55	1.56	1.55	1.56
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.55	1.56	1.55	1.56
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 2	224	285	1.20	1.19	1.19	1.18
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Silvergate-South Bay 230KV	157	157		1.04		
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.13	1.16	1.14	1.14
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.11	1.11	1.11	1.10
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.18	1.18	1.18	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.10	1.10	1.10	1.10
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	line PENSQTOS to MESA RIM 69 ck 1	97	102	1.00		1.02	1.02
	line SYCAMORE to SCRIPPS 69 ck 1	97	102	1.00		1.01	1.01
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	line GRANITE to GRANITTP 69 ck 1	55	59	1.11	1.09	1.12	1.10
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136		1.27		1.25
LINE MESAHGTS 69kV-MISSION 69kV ck1	line KEARNY to MISSION 69 ck 1	97	136	1.25	1.25	1.24	1.24
LINE KEARNY 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	97	129	1.17	1.18	1.17	1.17
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.11	1.12	1.12	1.12
LINE POMERADO 69kV-SYCAMORE 69kV ck2	line POMERADO to SYCAMORE 69 ck 1	97	136	1.29	1.29	1.28	1.28
LINE POMERADO 69kV-SYCAMORE 69kV ck1	line POMERADO to SYCAMORE 69 ck 2	97	136	1.29	1.29	1.28	1.28
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck2	tran SYCAMORE 230 to SYCAMORE 69 ck 1	224	269	1.19	1.18	1.17	1.17
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	line MIGUEL to BORDER 69 ck 1	55	55			1.02	
LINE BOLDRCRK 69kV-BLDCRKTP 69kV ck1	line BLDCRKTP to DESCANSO 69 ck 1	32	32				5.52
LINE STUART 69kV-STUARTTP 69kV ck1	line ENCNITAS to PENSQTOS 69 ck 1	4	4			2.06	

Post Processor 10HS MMC SY230 3BD Category C MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre3	10SY230NOY Post3	10SY230OOY Pre3	10SY230OOY Post3
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97.5	136.8	1.25	1.25	1.25	1.25
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	102	130	1.14	1.14	1.13	1.12
	Penasquitos 69kV SE Bus	102	130	1.17	1.17	1.16	1.15
	Sycamore 69kV S Bus	102	130	1.10	1.10	1.09	
	EA-BQ-PQ 138KV + MR-PQ 69KV	102	130	1.10	1.10	1.09	1.08
	POM-SX 1 + 2 69KV	102	130	1.14	1.13	1.12	1.12
	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.49	1.49	1.48	1.48
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	PEN-ES 1/2 230KV	456	577	1.21	1.21	1.21	1.21
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	PEN-ES 1/2 230KV	456	577	1.21	1.21	1.21	1.21
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	Otay 69kV W Bus	50	50	1.02	1.02		
	Otay 69kV E Bus	50	50	1.01	1.11		
	Miguel 69kV S Bus	50	50	1.13	1.15	1.14	1.14
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.17	1.17	1.20	1.21
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.10	1.10	1.09	1.10
	Los Coches 69kV W Bus	71	71	1.10	1.10	1.10	1.10
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.14	1.14	1.14	1.14
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.28	1.27	1.27	1.27
	PI-CP + TA-TB 138KV	136	136	1.13	1.13	1.13	1.13
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	PEN-ES 1/2 230KV	63	73	1.09	1.09	1.13	1.15
	CAN-SA-SH + EA-CAN 138KV	63	73	1.18	1.18	1.18	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	PEN-ES 1/2 230KV	63	73	1.08	1.08	1.13	1.14
	CAN-SA-SH + EA-CAN 138KV	63	73	1.10	1.10	1.10	1.10
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.17	1.17	1.17	1.17
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.11	1.11	1.11	1.11
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Miramar 69kV E Bus	97	102	1.05	1.04	1.06	1.05
	Penasquitos 69kV SE Bus	97	102	1.18	1.17	1.20	1.19
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.32	1.32	1.34	1.34
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	El Cajon 69kV S Bus	55	59	1.03	1.04	1.03	1.03
	Murray 69kV N Bus	55	59	1.39	1.37	1.40	1.38
	ML-JM 1 + 2 69KV	55	59	1.01		1.02	1.00
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.42	1.57	1.39	1.55
LINE MESAHGTS 69kV-MISSION 69kV ck1	Kearny 69kV E Bus	97	136	1.25	1.25	1.24	1.24
LINE KEARNY 69kV-MISSION 69kV ck1	Mission 69kV S Bus	97	129	1.18	1.18	1.17	1.17

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre3	10SY230NOY Post3	10SY230OOY Pre3	10SY230OOY Post3
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.04	1.05	1.05	1.06
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.14	1.15	1.15	1.16
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.53	1.53	1.51	1.51
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.11	1.12	1.11	1.12
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	97	129	1.14	1.14	1.14	1.14
	Penasquitos 69kV SE Bus	97	129		1.13		1.13
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.01	1.01	1.01	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	68	68		1.00		
LINE MIGUEL 69kV-JAMACHA 69kV ck1	Miguel 69kV N Bus	97	136	1.26	1.27	1.26	1.27
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.02	1.01	1.02	1.00
LINE B 69kV-MAIN ST 69kV ck2	Main St 69kV W Bus	97	111		1.01		1.00
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.27	1.28	1.27	1.28
LINE MURRAY 69kV-GARFIELD 69kV ck1	Murray 69kV N Bus	97	103	1.01	1.01	1.01	1.01
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.54	1.54	1.54	1.54
	POM-SX 1 + 2 69KV	68	76	1.31	1.32	1.31	1.31
LINE POWAY 69kV-POMERADO 69kV ck1	PEN-ES 1/2 230KV	97	136	1.35	1.35	1.34	1.33
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.02	1.02	1.02	1.02

Post Processor 10HS MMC SY230 3BD Category B MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre3	10SY230NOY Post3	10SY230OOY Pre3	10SY230OOY Post3
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.223	1.231	1.223	1.231
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.223	1.231	1.223	1.231
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Silvergate-South Bay 230KV	157	157		1.036		
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.127	1.157	1.138	1.142
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.111	1.106	1.109	1.104
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.016	1.017	1.016	1.017
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	line GRANITE to GRANITTP 69 ck 1	55	59	1.035	1.014	1.042	1.023
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.054	1.06	1.061	1.068
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	line MIGUEL to BORDER 69 ck 1	55	55			1.017	
LINE BOLDRCRK 69kV-BLDCRKTP 69kV ck1	line BLDCRKTP to DESCANSO 69 ck 1	32	32				5.524
LINE STUART 69kV-STUARTTP 69kV ck1	line ENCNITAS to PENSQTOS 69 ck 1	4	4			2.063	

Post Processor 10HS MMC SY230 3BD Category C MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10SY230NOY Pre3	10SY230NOY Post3	10SY230OOY Pre3	10SY230OOY Post3
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.165	1.165	1.158	1.157
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	Otay 69kV W Bus	50	50	1.02	1.021		
	Otay 69kV E Bus	50	50	1.01	1.114		
	Miguel 69kV S Bus	50	50	1.127	1.154	1.14	1.144
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.168	1.171	1.195	1.205
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.095	1.096	1.094	1.095
	Los Coches 69kV W Bus	71	71	1.104	1.1	1.101	1.097
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.067	1.066	1.066	1.066
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.275	1.274	1.274	1.274
	PI-CP + TA-TB 138KV	136	136	1.132	1.132	1.132	1.132
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	CAN-SA-SH + EA-CAN 138KV	63	73	1.016	1.017	1.015	1.016
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.168	1.168	1.168	1.168
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.112	1.112	1.112	1.112
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Miramar 69kV E Bus	97	102			1.004	1.003
	Penasquitos 69kV SE Bus	97	102	1.119	1.114	1.136	1.136
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.259	1.258	1.275	1.277
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.297	1.274	1.305	1.285
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.01	1.121		1.106
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102				1.003
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.085	1.091	1.092	1.099
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.091	1.093	1.079	1.079
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.03	1.033	1.029	1.032
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.012	1.013	1.012	1.013
LINE PALA 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	68	68		1.001		
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.212	1.214	1.211	1.213
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.375	1.377	1.374	1.376
	POM-SX 1 + 2 69KV	68	76	1.176	1.178	1.172	1.174
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.016	1.016	1.016	1.016

Post Processor MMC Worst Case Updated With Projects1 Category B MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre31	10ESYNOY Post31	10ESYNOY Post31p
LINE MESAHGTS 69kV-MISSION 69kV ck1	line KEARNY to MISSION 69 ck 1	97	136	1.29	1.31	1.31
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136	1.75	1.97	
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line PENSQTOS to MESA RIM 69 ck 1	102	130	1.14	1.16	1.16
	tran PENSQTOS 230 to PENSQTOS 69 ck 1	102	130		1.09	1.09
	tran PENSQTOS 230 to PENSQTOS 69 ck 2	102	130		1.10	1.10
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.55	1.62	1.61
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.55	1.62	1.61
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line MIGUEL to BORDER 69 ck 1	140	143	1.19	1.12	1.12
	line ML-MS&ML-SX 230kV SPS6.3	140	143	1.08	1.03	1.02
	line ML-MS 1/2 230 kV SPS6.4	140	143	1.08	1.03	1.02
	line MISSION to GRNT HLL 138 ck 1	140	143	1.33	1.29	1.29
	line GRNT HLL to SOUTHBAY 138 ck 1	140	143	1.36	1.31	1.31
	line TELECYN to SOUTHBAY 138 ck 1	140	143	1.08	1.02	1.02
	line SOUTHBAY to MIGUEL61 138 ck 1	140	143	1.05		
	line MIGUEL61 to LOSCOCHS 138 ck 1	140	143	1.09	1.03	1.03
	line OLD TOWN to KETTNER 69 ck 1	140	143	1.06		
	line LONESTAR to BORDERTP 69 ck 1	140	143	1.07	1.00	1.00
	tran MIGUEL 69 to MIGUEL 230 ck 1	140	143	1.12	1.06	1.05
	tran MIGUEL 69 to MIGUEL 230 ck 2	140	143	1.12	1.06	1.05
	tran OLD TOWN 69 to OLD TOWN 230 ck 1	140	143	1.06		
	tran OLD TOWN 69 to OLD TOWN 230 ck 2	140	143	1.06		
	gen CALPK_BD 13.80	140	143	1.05		
	gen LRKSP_BD 13.80	140	143	1.05		
	gen OTAY_49 13.80	140	143	1.09		
	gen SOUTHBY1 15.00	140	143	1.30	1.24	1.24
	gen DIVISION 69.00	140	143	1.05		
	gen OTAY_46A 13.80	140	143		1.03	1.03
	gen OTAY_46B 13.80	140	143		1.03	1.03
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.13	1.16	1.14
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	line GRNT HLL to SOUTHBAY 138 ck 1	157	157		1.00	
	line SOUTHBAY to SWEETWTR 69 ck 1	157	157	1.16	1.32	
		200	205			1.03
LINE NATNLCTY 69kV-SWTWTRTP 69kV ck1	line SAMPSON to DIVISION 69 ck 1	71	71	1.14	1.35	1.35

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre31	10ESYNOY Post31	10ESYNOY Post31p
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.17	1.18	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.10	1.10	1.10
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.09	1.09	1.09
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	line GRANITE to GRANITTP 69 ck 1	55	59	1.09	1.08	1.08
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	line PENSQTOS to TOREYPNS 69 ck 1	97	129		1.13	1.13
LINE KEARNY 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	97	129	1.22	1.24	1.24
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.12	1.14	1.14
LINE POMERADO 69kV-SYCAMORE 69kV ck2	line POMERADO to SYCAMORE 69 ck 1	97	136	1.34	1.37	1.37
LINE POMERADO 69kV-SYCAMORE 69kV ck1	line POMERADO to SYCAMORE 69 ck 2	97	136	1.34	1.37	1.37
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck2	tran SYCAMORE 230 to SYCAMORE 69 ck 1	224	269	1.14	1.16	1.16
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 2	224	285	1.15	1.17	1.17

Post Processor MMC Worst Case Updated With Projects1 Category C MVA1

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre31	10ESYNOY Post31	10ESYNOY Post31p
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97.5	136.8	1.23	1.23	1.23
LINE MESAHGTS 69kV-MISSION 69kV ck1	Kearny 69kV E Bus	97	136	1.29	1.31	1.31
LINE POWAY 69kV-POMERADO 69kV ck1	SX-PEN + PEN-EA-SA 230KV	97	136		1.20	1.20
	PEN-ES 1/2 230KV	97	136	1.39	1.39	1.39
	SX-PEN 230KV + BE-AR 69KV	97	136		1.20	1.20
	SX-PEN 230KV + AR-SX 69KV	97	136	1.24	1.31	1.31
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Miguel 69kV S Bus	97	136		1.21	
	Southbay 69kV S Bus	97	136	2.09	2.30	
		200	205			1.11
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	102	130	1.11	1.14	1.14
	Penasquitos 69kV SE Bus	102	130	1.13	1.15	1.15
	POM-SX 1 + 2 69KV	102	130	1.10	1.13	1.13
	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.45	1.47	1.47
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	PEN-ES 1/2 230KV	456	577	1.20	1.21	1.21
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	PEN-ES 1/2 230KV	456	577	1.20	1.21	1.21
LINE GRNT HLL 138kV-SOUTHBAY 138kV ck1	SY-ML61 + SY-TC 138KV	310	434		1.21	1.22
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Otay 69kV W Bus	140	143	1.06	1.08	1.08
	ML BK71 & Miguel - Mission #1 230 kV	140	143	1.15	1.09	1.09
	Los Coches 69kV W Bus	140	143	1.06		
	Miguel 69kV S Bus	140	143	1.10	1.03	1.03
	Murray 69kV N Bus	140	143	1.07	1.01	1.01
	ML-MS1+ ML-MS2 230KV	140	143	1.08	1.03	1.02
	SY-ML61 + SY-TC 138KV	140	143	1.23	1.17	1.17
	ML61-LC+ML-LC 138/69KV	140	143	1.07	1.01	1.01
	PV-TC + SY-ML61 138KV	140	143	1.10	1.04	1.04
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	Otay 69kV E Bus	50	50		1.08	1.08
	Miguel 69kV S Bus	50	50	1.13	1.16	1.14
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Miguel 69kV S Bus	157	157		1.06	
	Southbay 69kV N Bus	157	157	1.17	1.31	
		200	205			1.03
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.18	1.14	1.14
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.14	1.14	1.14
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.27	1.27	1.27
	PI-CP + TA-TB 138KV	136	136	1.13	1.13	1.13

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre31	10ESYNOY Post31	10ESYNOY Post31p
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	PEN-ES 1/2 230KV	63	73	1.11	1.04	1.04
	CAN-SA-SH + EA-CAN 138KV	63	73	1.17	1.18	1.18
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	PEN-ES 1/2 230KV	63	73	1.11	1.04	1.03
	CAN-SA-SH + EA-CAN 138KV	63	73	1.10	1.10	1.10
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.17	1.17	1.17
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.11	1.11	1.11
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.09	1.09	1.09
	Los Coches 69kV W Bus	71	71	1.08	1.08	1.08
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	El Cajon 69kV S Bus	55	59	1.04	1.06	1.06
	Murray 69kV N Bus	55	59	1.34	1.32	1.32
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	97	129	1.13	1.14	1.14
	Penasquitos 69kV SE Bus	97	129	1.14	1.14	1.14
LINE DEL MAR 69kV-PENSQTOS 69kV ck1	Penasquitos 69kV NW Bus	50	50		1.00	
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Penasquitos 69kV SE Bus	97	102	1.10	1.07	1.07
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.28	1.25	1.25
LINE KEARNY 69kV-MISSION 69kV ck1	Mission 69kV S Bus	97	129	1.23	1.24	1.24
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.05	1.07	1.07
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.15	1.17	1.17
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.57	1.61	1.61
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.11	1.11	1.11
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.01	1.01	1.01
LINE MIGUEL 69kV-JAMACHA 69kV ck1	Miguel 69kV N Bus	97	136	1.24	1.27	1.27
LINE B 69kV-MAIN ST 69kV ck2	Main St 69kV W Bus	97	111	1.10	1.15	1.15
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.26	1.27	1.27
LINE MURRAY 69kV-GARFIELD 69kV ck1	Murray 69kV N Bus	97	103		1.00	1.00
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.53	1.54	1.54
	POM-SX 1 + 2 69KV	68	76	1.34	1.35	1.35
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.01		
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.02	1.02	1.02
LINE CHOLLAS 69kV-SPRNGVLY 69kV ck1	ML-JM 1 + 2 69KV	97	136		1.22	1.22

Post Processor MMC Worst Case Updated With Projects1 Category B MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre31	10ESYNOY Post31	10ESYNOY Post31p
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	line MONTGMRY to MONTGYTP 69 ck 1	97	136	1.245	1.408	
LINE TALEGA 230kV-S.ONOFRE 230kV ck1	line TALEGA to S.ONOFRE 230 ck 1	456	577	1.228	1.276	1.269
LINE TALEGA 230kV-S.ONOFRE 230kV ck2	line TALEGA to S.ONOFRE 230 ck 2	456	577	1.228	1.276	1.269
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line MIGUEL to BORDER 69 ck 1	140	143	1.166	1.095	1.093
	line ML-MS&ML-SX 230kV SPS6.3	140	143	1.057	1.005	1.003
	line ML-MS 1/2 230 kV SPS6.4	140	143	1.057	1.005	1.003
	line MISSION to GRNT HLL 138 ck 1	140	143	1.306	1.261	1.259
	line GRNT HLL to SOUTHBAY 138 ck 1	140	143	1.332	1.287	1.285
	line TELECYN to SOUTHBAY 138 ck 1	140	143	1.062	1.003	1.001
	line SOUTHBAY to MIGUEL61 138 ck 1	140	143	1.029		
	line MIGUEL61 to LOSCOCHS 138 ck 1	140	143	1.069	1.012	1.01
	line OLD TOWN to KETTNER 69 ck 1	140	143	1.042		
	line LONESTAR to BORDERTP 69 ck 1	140	143	1.049		
	tran MIGUEL 69 to MIGUEL 230 ck 1	140	143	1.093	1.033	1.032
	tran MIGUEL 69 to MIGUEL 230 ck 2	140	143	1.093	1.033	1.032
	tran OLD TOWN 69 to OLD TOWN 230 ck 1	140	143	1.038		
	tran OLD TOWN 69 to OLD TOWN 230 ck 2	140	143	1.038		
	gen CALPK_BD 13.80	140	143	1.029		
	gen LRKSP_BD 13.80	140	143	1.031		
	gen OTAY_49 13.80	140	143	1.071		
	gen SOUTHBY1 15.00	140	143	1.274	1.212	1.211
	gen DIVISION 69.00	140	143	1.032		
	gen OTAY_46A 13.80	140	143		1.005	1.003
	gen OTAY_46B 13.80	140	143		1.005	1.003
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	line MIGUEL to BORDER 69 ck 1	50	50	1.129	1.164	1.14
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	line GRNT HLL to SOUTHBAY 138 ck 1	157	157		1.001	
	line SOUTHBAY to SWEETWTR 69 ck 1	157	157	1.162	1.315	
		200	205			1.007
LINE NATNLCTY 69kV-SWTWTRTP 69kV ck1	line SAMPSON to DIVISION 69 ck 1	71	71	1.136	1.354	1.354
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.014	1.015	1.015
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.085	1.089	1.089
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	line GRANITE to GRANITTP 69 ck 1	55	59	1.014	1.003	1.003
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	102	1.065	1.08	1.08

Post Processor MMC Worst Case Updated With Projects1 Category C MVA2

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre31	10ESYNOY Post31	10ESYNOY Post31p
LINE SOUTHBAY 69kV-SWEETWTR 69kV ck1	Southbay 69kV S Bus	97	136	1.487	1.638	
		200	205			1.079
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	102	130	1.136	1.151	1.151
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Otay 69kV W Bus	140	143	1.041	1.056	1.055
	ML BK71 & Miguel - Mission #1 230 kV	140	143	1.129	1.071	1.069
	Los Coches 69kV W Bus	140	143	1.034		
	Miguel 69kV S Bus	140	143	1.074	1.006	1.004
	Murray 69kV N Bus	140	143	1.045		
	ML-MS1+ ML-MS2 230KV	140	143	1.057	1.005	1.003
	SY-ML61 + SY-TC 138KV	140	143	1.203	1.143	1.142
	ML61-LC+ML-LC 138/69KV	140	143	1.05		
	PV-TC + SY-ML61 138KV	140	143	1.074	1.017	1.016
LINE SANYSDRO 69kV-OTAYLKTP 69kV ck1	Otay 69kV E Bus	50	50		1.076	1.076
	Miguel 69kV S Bus	50	50	1.128	1.162	1.138
LINE SWEETWTR 69kV-MONTGYTP 69kV ck1	Miguel 69kV S Bus	157	157		1.055	
	Southbay 69kV N Bus	157	157	1.17	1.313	
		200	205			1.006
LINE CALAVRTP 138kV-SHADOWR 138kV ck1	PEN-ES 1/2 230KV	112	112	1.181	1.138	1.137
LINE TALEGA 138kV-MARGARTA 138kV ck1	TA-TB + TA-PI 138KV	273	292	1.066	1.066	1.066
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.274	1.273	1.273
	PI-CP + TA-TB 138KV	136	136	1.132	1.131	1.131
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	CAN-SA-SH + EA-CAN 138KV	63	73	1.013	1.015	1.015
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.168	1.167	1.167
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.112	1.111	1.111
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.092	1.094	1.094
	Los Coches 69kV W Bus	71	71	1.077	1.081	1.081
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.251	1.229	1.23
LINE DEL MAR 69kV-PENSQTOS 69kV ck1	Penasquitos 69kV NW Bus	50	50		1.001	
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Penasquitos 69kV SE Bus	97	102	1.042	1.018	1.018
	MR-PQ 69KV + PQ-MRM 69KV	97	102	1.213	1.192	1.192
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102		1.013	1.012

Monitored Element	Contingency Description	MVA1	MVA2	10ESYNOY Pre31	10ESYNOY Post31	10ESYNOY Post31p
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	102	1.096	1.112	1.111
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.121	1.148	1.148
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.024	1.029	1.029
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77	1.01	1.012	1.011
LINE B 69kV-MAIN ST 69kV ck2	Main St 69kV W Bus	97	111		1.005	1.004
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.199	1.204	1.204
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.37	1.374	1.374
	POM-SX 1 + 2 69KV	68	76	1.199	1.209	1.209
LINE R.SNTAFE 69kV-R.SNTATP 69kV ck1	PEN-ES 1/2 230KV	64	64	1.008		
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.016	1.015	1.015

Appendix D

Load and Resource Summary Table

Table D1. Dispatch Stack for 2010HS W/ Existing South Bay and 3 Border Generating Units On

	kV	2010HS Pre (MW)	2010HS Post (MW)
QF Generation (Always On)			
ASH	69	0.9	0.9
CABRILLO	69	2.9	2.9
CAPSTRNO	138	3.3	3.3
CARLTNHS	138	2.6	2.6
DIVISION	69	47	47
EASTGATE	69	1	1
GOALLINE	69	48.1	48.1
MESAHGTS	69	3.1	3.1
MURRAY	69	0.2	0.2
NOISLMTR	69	33	33
OTAY	69	2.8	2.8
POINTLMA	69	24.3	24.3
R.SNTAFE	69	0.7	0.7
SAMPSON	12.5	11	11
SANMRCOS	69	1.1	1.1
SHADOWR	138	0.1	0.1
Subtotal		182.1	182.1
Priority One			
SOUTHBY1	15	145	143
SOUTHBY2	15	144	145
SOUTHBY3	20	174	174
SOUTHBY4	20	221	221
CALPK_BD	13.8	42	42
LRKSPBD1	13.8	46	46
LRKSPBD2	13.8	46	46
Subtotal		818	817
Priority Two			
CAMPOGEN	0.69	10	10
ELSNORE1	16	150	250
ELSNORE2	16	150	250
ENCINA 1	14.4	80	75
ENCINA 2	14.4	80	75
ENCINA 3	14.4	80	75
ENCINA 4	22	150	75
ENCINA 5	24	150	75
IV GEN1	21	155	155
IV GEN2	18	113	116
IV GEN3	18	113	116
LkHodG1	13.8	20	20
LkHodG2	13.8	20	20
OTAYMGT1	18	150	100

OTAYMGT2	18	150	100
OTAYMST1	16	3.2	68.7
OTAY_49	13.8	49.5	46.5
OTAY_60	13.8	0	46.5
PEN_CT1	18	100	100
PEN_CT2	18	100	100
PEN_ST	18	200	100
SXCC-U1	16	115	140
SXCC-U2	16	115	135
SXCC-U3	21	200	200
SXCC-U4	16	125	135
BARRETT	69	0	0
CALPK_EC	13.8	0	0
CALPK_ES	13.8	0	0
CW117MWG	34.5	0	0
CW36MWG	34.5	0	0
ELCAJNGT	12.5	0	0
ENCINAGT	12.5	0	0
INTBCT	16	0	0
INTBST	18	0	0
KEARN2AB	12.5	0	0
KEARN2AB	12.5	0	0
KEARN2CD	12.5	0	0
KEARN2CD	12.5	0	0
KEARN3AB	12.5	0	0
KEARN3AB	12.5	0	0
KEARN3CD	12.5	0	0
KEARN3CD	12.5	0	0
KEARNGT1	12.5	0	0
MEF	13.8	0	0
MIRAMRGT	12.5	0	0
MIRAMRGT	12.5	0	0
PFC-AVC	0.6	0	0
RAMCO_ES	13.8	0	0
SOLAR1_A	230	0	0
SOUTHBGT	12.5	0	0
TALEGA	3.2	0	0
TULEG	34.5	0	0
TULEG	34.5	0	0
Subtotal		2578.7	2583.7
TOTAL		3578.8	3582.8

Appendix E

IFAS Restudy Short Circuit Results

Table E1. Short Circuit Results for Future Year 2010HS W/ Existing 138/69kV South Bay Configuration

BREAKER	Data	FY Pre	FY Post
CS614	Percent Duty	96.5	97.1
	Breaker Capacity	21000	21000
CS622	Percent Duty	96.5	97.1
	Breaker Capacity	21000	21000
CS640	Percent Duty	96.5	97.1
	Breaker Capacity	21000	21000
CW69	Percent Duty	8.6	8.6
	Breaker Capacity	32000	32000
DI606	Percent Duty	103.1	104
	Breaker Capacity	44000	44000
DI658	Percent Duty	165.4	166.9
	Breaker Capacity	27000	27000
DI6901	Percent Duty	108.6	109.6
	Breaker Capacity	40000	40000
EC624	Percent Duty	107.6	107.8
	Breaker Capacity	21000	21000
EL636	Percent Duty	112.9	112.9
	Breaker Capacity	21000	21000
EL671	Percent Duty	112.9	112.9
	Breaker Capacity	21000	21000
ES30	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES31	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES32	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES50	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES679	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES684	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES688	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES689	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES6908	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES6930	Percent Duty	113.5	113.5
	Breaker Capacity	40000	40000
ES696	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES70	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000
ES71	Percent Duty	114.1	114.1
	Breaker Capacity	40000	40000

BREAKER	Data	FY Pre	FY Post
ES72	Percent Duty	113.5	113.5
	Breaker Capacity	40000	40000
GE31	Percent Duty	98.2	98.2
	Breaker Capacity	26000	26000
GE665	Percent Duty	98.2	98.2
	Breaker Capacity	26000	26000
GE6905	Percent Duty	98.2	98.2
	Breaker Capacity	26000	26000
KY30	Percent Duty	101.9	101.9
	Breaker Capacity	29000	29000
KY31	Percent Duty	109.5	109.5
	Breaker Capacity	27000	27000
KY32	Percent Duty	109.5	109.5
	Breaker Capacity	27000	27000
KY663	Percent Duty	101.9	101.9
	Breaker Capacity	29000	29000
LCEAST31	Percent Duty	109.2	109.3
	Breaker Capacity	21000	21000
LCEASTBT	Percent Duty	95.5	95.6
	Breaker Capacity	24000	24000
LCWEST32	Percent Duty	109.3	109.4
	Breaker Capacity	21000	21000
LCWESTBT	Percent Duty	95.6	95.7
	Breaker Capacity	24000	24000
ME32	Percent Duty	108.1	108.1
	Breaker Capacity	12500	12500
ME33	Percent Duty	108.1	108.1
	Breaker Capacity	12500	12500
MG30	Percent Duty	105.7	109.6
	Breaker Capacity	29000	29000
MG31	Percent Duty	105.7	109.6
	Breaker Capacity	29000	29000
MG641	Percent Duty	114.2	117.7
	Breaker Capacity	27000	27000
MG642	Percent Duty	114.2	117.7
	Breaker Capacity	27000	27000
MI602	Percent Duty	101.4	102
	Breaker Capacity	40000	40000
MI605	Percent Duty		95.4
	Breaker Capacity		42000
MI652	Percent Duty		95.4
	Breaker Capacity		42000
MI656	Percent Duty		95.4
	Breaker Capacity		42000
MI657	Percent Duty	96.6	97.1
	Breaker Capacity	42000	42000
MI699	Percent Duty	98.6	99.1

BREAKER	Data	FY Pre	FY Post
	Breaker Capacity	42000	42000
MS30	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS31	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS32	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS33	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS50	Percent Duty	116.2	116.3
	Breaker Capacity	41000	41000
MS51	Percent Duty	116.2	116.3
	Breaker Capacity	41000	41000
MS52	Percent Duty	116.2	116.3
	Breaker Capacity	41000	41000
MS618	Percent Duty	113.4	113.5
	Breaker Capacity	42000	42000
MS619	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS653	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS654	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS663	Percent Duty	113.4	113.5
	Breaker Capacity	42000	42000
MS670	Percent Duty	113.4	113.5
	Breaker Capacity	42000	42000
MS671	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS676	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
MS70	Percent Duty	119.1	119.2
	Breaker Capacity	40000	40000
PQ13810	Percent Duty	138.6	138.7
	Breaker Capacity	21000	21000
PQ50	Percent Duty	247.5	247.6
	Breaker Capacity	63000	63000
PQ51	Percent Duty	128.1	128.2
	Breaker Capacity	38000	38000
PQ52	Percent Duty	128.1	128.2
	Breaker Capacity	38000	38000
PQ610	Percent Duty	110.8	110.9
	Breaker Capacity	42000	42000
PQ661	Percent Duty	108.9	108.9
	Breaker Capacity	42000	42000
PQ662	Percent Duty	108.9	108.9
	Breaker Capacity	42000	42000

BREAKER	Data	FY Pre	FY Post
PQ664	Percent Duty	122.5	122.6
	Breaker Capacity	38000	38000
PQ665	Percent Duty	116.4	116.4
	Breaker Capacity	40000	40000
PQ666	Percent Duty	116.4	116.4
	Breaker Capacity	40000	40000
PQ667	Percent Duty	116.4	116.4
	Breaker Capacity	40000	40000
PQ674	Percent Duty	108.9	108.9
	Breaker Capacity	42000	42000
PQ675	Percent Duty	108.9	108.9
	Breaker Capacity	42000	42000
PQ6905	Percent Duty	108.9	108.9
	Breaker Capacity	42000	42000
PQ6906	Percent Duty	122.5	122.6
	Breaker Capacity	38000	38000
PQ70	Percent Duty	116.4	116.4
	Breaker Capacity	40000	40000
PQ71	Percent Duty	128.1	128.2
	Breaker Capacity	38000	38000
RN617	Percent Duty	116.1	116.2
	Breaker Capacity	21000	21000
RN661	Percent Duty	116.1	116.2
	Breaker Capacity	21000	21000
RN6927	Percent Duty	116.1	116.2
	Breaker Capacity	21000	21000
SA34	Percent Duty	160.2	160.2
	Breaker Capacity	27000	27000
SA35	Percent Duty	160.2	160.2
	Breaker Capacity	27000	27000
SA51	Percent Duty	109.1	109.1
	Breaker Capacity	38000	38000
SA680	Percent Duty	160.2	160.2
	Breaker Capacity	27000	27000
SA690	Percent Duty	108.1	108.1
	Breaker Capacity	40000	40000
SA6912	Percent Duty	160.2	160.2
	Breaker Capacity	27000	27000
SA693	Percent Duty	160.2	160.2
	Breaker Capacity	27000	27000
SA694	Percent Duty	137.3	137.3
	Breaker Capacity	31500	31500
SA697	Percent Duty	160.2	160.2
	Breaker Capacity	27000	27000
SF616	Percent Duty	114.2	114.2
	Breaker Capacity	13000	13000
SO23007	Percent Duty	118.1	118.2

BREAKER	Data	FY Pre	FY Post
	Breaker Capacity	50000	50000
SY1	Percent Duty	167.7	174.5
	Breaker Capacity	29000	29000
SY50	Percent Duty	215	219.9
	Breaker Capacity	79000	79000
SY641	Percent Duty	115.8	120.5
	Breaker Capacity	42000	42000
SY642	Percent Duty	127.2	132.5
	Breaker Capacity	38000	38000
SY644	Percent Duty	115.8	120.5
	Breaker Capacity	42000	42000
SY645	Percent Duty	115.8	120.5
	Breaker Capacity	42000	42000
SY646	Percent Duty	115.8	120.5
	Breaker Capacity	42000	42000
SY647	Percent Duty	115.1	119.9
	Breaker Capacity	42000	42000
SYGT1	Percent Duty	115.8	120.5
	Breaker Capacity	42000	42000
WA651	Percent Duty	97.3	97.9
	Breaker Capacity	21000	21000
WA652	Percent Duty	97.3	97.9
	Breaker Capacity	21000	21000