Response to Follow Up Questions

Q1: Please reconcile the ISO's use of the "... contingency ... in the CPUC's ... Powerlink transmission case and the ... 1" ... contingency ... setting the bounds of local capacity requirements ... Please address whether the ISO's studies presented in the Sunrise case ... contingency ... included ... 1," and identified load shedding risk ... Sunrise ... corridor ... that was ultimately approved.

Response:

As we indicated in the meeting, ISO testimony ... discussed ... in the ... increased reliability associated with the route that Sunrise was ultimately approved compared to the route that was originally proposed ... The approved corridor still provided significant ... the ... risk ... 1000 ... MW ... load shedding ... Attachment 1 is the ISO ... testimony ... Below is ... an ...

"Q. ... 1 ... 0. . 1 ... z ... 0 ... A ... 1 ... A ... EN ... .

A. Power flow thermal loading, transient and post ... stability analysis was ... on ASPEN10 at the 3500 MW ... condition ... and ... import level. With the exception of the common mode outage ... lines west of Imperial Valley substation, the performance ... found to be equivalent to that of the Sunrise ... SDG&E. ***For the common mode outage of ... 500 kV lines west of Imperial Valley substation, the CAISO found that a Special Protection Scheme ... needed that would shed up to 500 to 1000 MW of load in ...*** (emphasis added) ... 1000 to 2000 MW of ... generation ... Valley Substation."

The testimony clearly indicates ... contingencies ... 1 ... contingencies were studied, and that ... shedding ... to 1000 MW of ... Diego was also identified ... the initial, preferred corridor had an advantage over the approved corridor in this regard, ... the ... significant benefits ... ISO supported ... the ... project ... either configuration.

Q2: Please explain ... 1000 MW ... local capacity benefit provided ... Sunrise ... contingency and why this criteria ... local ... the Sunrise project.

Response:

Local capacity requirements are based on the consequences of ... studied, and then using the largest result to establish the ... isolate the local capacity benefits ... provided by the Sunrise ...

requirements within and without the ... this context, below is an the "ISO's ... M, 2014 Local Capacity Study, "Technical 2012

There are several components ... underlying the Technical Study. Consistent with mandatory nature of the NERC Planning under a statutory obligation to ... and reliable operation transmission grid consistent with the ... Planning Standards, ... ISO is further under an obligation, pursuant to its ... Agreement, to secure compliance with all "Applicable Reliab... Reliability Criteria consists of ... NERC Standards as well as Loc... Criteria, which ... Reliability Criteria unique to the transmission participating Transmission Owners ("PTOs").

Pursuant to its tariff authority, the ISO, after ... consultation stakeholders, has ... Grid Planning Standards intended to, interpret NERC Planning Standards ... circumstances in which the apply standards more stringent ... Together, ... these ... established criteria form Reliability Criteria to ... followed performance of the ISO Controlled Grid under Contingency The ... Planning Standards define reliability on ... interconnected ... using the terms "adequacy" and "security." "Adequacy" is the ability of systems to supply the aggregate electrical ... requirements of customers at all times, taking into account ... physical ... cha... system such as transmission ratings and scheduled and unscheduled outages of system elements. "Security" is the ab... to withstand ... disturbances such as electric short circuits or ... system elements. The ... Standards ... are organized by Performance Categories. For instance, one category ... ensure grid integrity is maintained under certain adverse ... security, but also that all customers continue to receive ... e.g., adequacy ... case, grid reliability and service reliability ... 4).

Before the construction ... of Sunrise:

With everything else ... if the Sunrise project had not ... Category B contingency ... is the ... Otay ... Mesa ... by the ... 1 loss of the ... Miguel ... 500 kV ... Southwest ... Link

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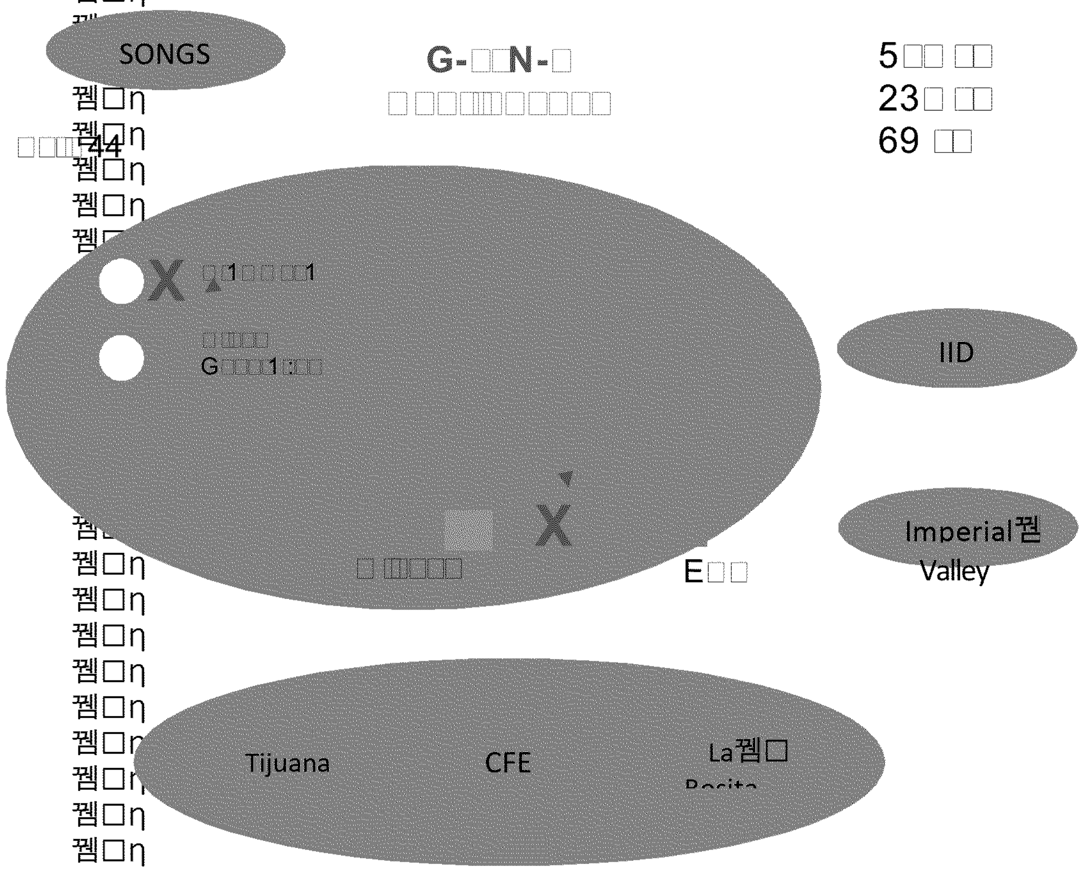
Figure 1:

G-1, N-1 Contingency



Under these circumstances, the import level into the San … could be subtracted from the peak load to determine the … the Otay Mesa generator added capacity … capacity requireme… for the outage of this unit … overlapping with the 500 …

The results, for … the level 2012 studies … below … table 1 below…

Table 1: LCR Area Before Sunrise in San Diego

Study Result	2021 (4 A- ( ))
1 in 10 Peak Lo[...] Area)	5,749
Import Capability without [...]	-2500
Loss of [...] Otay [...]	+605
L G- /N-	3 854

As explained previously, the most severe [...] the constraint [...] capacity based [...] requirement. Before [...] Sunrise, [...] contingency described above is more severe [...] N-1, [...] N-1 contingency [...] the loss of a single 230 [...] the Path 44 transfer path followed by [...] the SONGS loss [...] of the [...] Miguel [...] kV 500 circuit. Because [...] the loss of the Otay Mesa generator [...] than a single [...] 230 [...] outage [...] results in higher local capa[...] than [...] the [...] outage [...] the [...] outage was not relevant in es[...] capacity requirement before Sunrise was [...] operating limit bas[...] on thermal limits were the limiting [...] before [...] stability limits were encountered.

After the construction of Sunrise:

Following the construction of the Sunrise [...] project, [...] category B most [...] contingency remains the same as described above [...] it [...] contingency [...] the loss of one 500 kV circuit (Sunrise or SW[...] 500 kV circuit. That is because each line is capable [...] produced by Otay [...] contingency [...] Figure 2 below.

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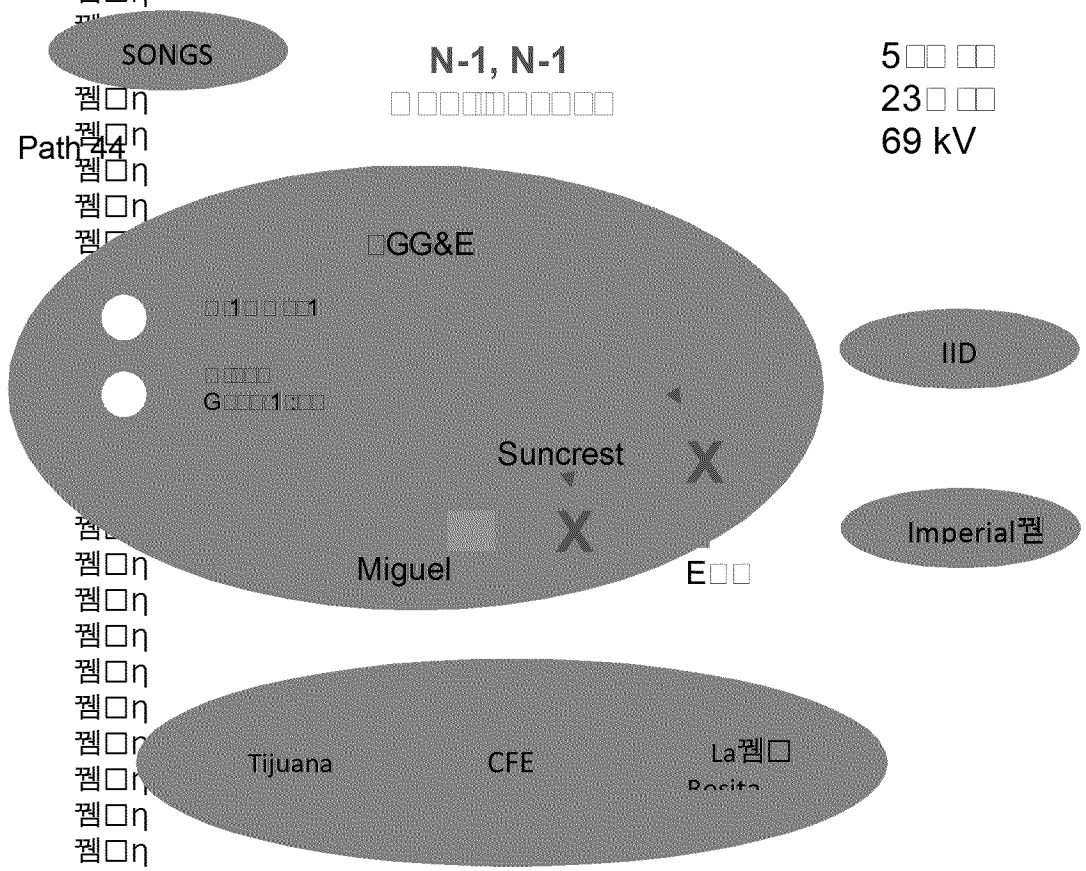
Figure꿺□η2:꿺□η꿺꿺□η

N-1, 꿺□1꿺□η□Contingency꿺□η



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Imports쩹□ηachievable쩹□η	3086쩹□η 3225쩹□η
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Comparing쩹□ηthe쩹□ηresults쩹□ηin쩹□ηTable쩹□η1쩹□ηand쩹□ηTable쩹□η2쩹□η... requirements쩹□η more쩹□ηthan쩹□η1,100쩹□ηMW쩹□η... the쩹□ηfour쩹□ηgeneration쩹□ηscenarios쩹□η these쩹□ηresults쩹□ηindicate,쩹□ηthe쩹□ηSunrise쩹□ηtransmission쩹□ηproject쩹□ηwould쩹□η over쩹□η1000쩹□ηMW쩹□ηof쩹□ηreduced쩹□ηlocal쩹□ηcapacity쩹□ηrequirement쩹□ηin쩹□η benefits쩹□ηof쩹□ηenabling쩹□ηdeliverability쩹□ηgeneration쩹□ηin쩹□ηof쩹□ηSa

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쩹□η	**Before쩹□ηSunrise,쩹□η"N-1"쩹□η Analysis쩹□η**	**After쩹□ηSunrise,쩹□η"N-1"쩹□η Analysis쩹□η**
Sunrise쩹□η500쩹□ηkV쩹□	No쩹□η	No쩹□η
Sunrise쩹□ηrelated쩹□η230 reinforcements쩹□η	No쩹□η	**YES쩹□η**
SWPL쩹□η(Imperial쩹□ηValley 500쩹□ηkV쩹□ηline)	No쩹□η	No쩹□η
Otay쩹□ηMesa쩹□ηgenerati MW)쩹□η	No쩹□η	**Yes쩹□η**
Otay쩹□ηMesa쩹□ηvoltage (functioning쩹□ηvoltage	No쩹□η	**Yes쩹□η**
Limiting쩹□ηcondition쩹□ηfor쩹□ studied쩹□ηcontingencies쩹□	N-1쩹□ηthermal쩹□ηlimit쩹□ηh employed쩹□ηfor쩹□ηPath Sunrise쩹□ηsystem쩹□η	**Voltage쩹□ηcollapse쩹□η**

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Q3: Please provide the ISO planning standards and NERC plannin

Response:

Reliability assessment results are measured against the applicable ... determine if system performance criteria have been met accor... Planning Standards, the WECC Transmission Planning and System Perfo... Planning Standards. The ISO planning standards are developed ... approved by the ISO Board. The current version of ... stakeholder comments for the latest version that the ISO Board ... and approved on July, 2011 is available at:

http://www.caiso.com/informed/Pages/StakeholderProcesses/CompletedStakeholderProcesses/TransmissionPlanningStandards.aspx

A link to the NERC TPL 001, 002, 003, 004 standards is provided below:

Reliability Standards

The relevant WECC criterion TPL-001-WECC-CRT-2, available at:

http://www.wecc.biz/library/Documentation%20Categorization%20Files/Forms/AllItems.aspx?RootFolder=%2flibrary%2fDocumentation%20Categorization%20Files%2fRegional%20Criteria&FolderCTID=&View=%7bAD6002B2%2d0E39%2d48DD%2dB4B5%2d9AFC9F8A8DB3%7d

Q4: Why ... Palomar ... combined cycle ... power trains ... single power plant gas turbines and steam turbines be considered separate outages instead of a single "plant" outage?

Response:

First, this question is relevant ... ISO ... contingency ... instead of only the ... outage. As the ... outage ... indicated, ... considered in establishing local capacity needs, ... the most signific... excessive and unacceptable levels of ... shedding.

Setting this aside, the ISO has reviewed ... outage data ... Palomar to see if ... the gas turbines ... turbines as separate outages ... the ISO's criteria established ... The criteria require that ... planned ... outages ... for three ... years, except for the period immediately following the commissionin... two years ... insufficient

The ISO cannot release the actual data due to generator ... summarize the results ... (Generator ... performance data is confidential ... the facility owner, therefore, we cannot provide this informatio... request the information directly from the ... owner ... outages, the ... identified:

- 14 full plant trips of Otay Mesa [illegible] between Sept 2009 [illegible]
- [illegible] full plant trips of Palomar [illegible] between July 2009 to [illegible]

Based on this review, the data does not support treating [illegible] separate generators, [illegible] continuing the treatment as single generators for continge[illegible] analysis.

Q5: A question was raised about the profile [illegible] assumptions [illegible] whether the ISO considered all solar generation to use [illegible]

Response:

The ISO has not assumed all solar [illegible] California [illegible] an extensive process for developing production profiles for solar [illegible] resources in 2020 based on the expected [illegible] portfolios [illegible] profiles accounted for different solar technologies [illegible] 5,258MW of [illegible] (2,464, Thin Film Fixed, 1,045MW fixed small solar, 1,749 [illegible] geographically distributed, 1,560MW [illegible] tracking and 3939MW [illegible] was solar [illegible]

Please refer to the Exhibit 2, [illegible]-05-006 [illegible] CPUC [illegible] 1, 2011 Testimo[illegible]
http://www.caiso.com/Documents/2011-07-01_R10-05-006_Testimony.pdf

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