

**ATTACHMENT N**



## Memorandum

To: ISO Board of Governors  
From: Armie Perez, Director of Grid Planning  
Steve Greenleaf, Director of Regulatory Policy  
For the FERC Large Generator Interconnection Rule Team  
CC: ISO Officers: Board Assistants  
Date: November 25, 2003  
Re: ***FERC Large Generator Interconnection Rule ("Order 2003") Proposal***

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***This memo requires Board action.***

### **Executive Summary**

ISO management seeks authorization from the Board of Governors to prepare, and subsequently file, an appropriate Compliance Filing with the Federal Energy Regulatory Commission ("FERC"). In the filing the ISO will describe how it will use the flexibility granted by FERC in its Large Generator Interconnection Final Rule ("Order 2003") to implement interconnection policies and procedures that address the unique features of the California market.

On July 24, 2003, FERC issued Order 2003, which is the culmination of a two-year effort to reform and standardize interconnection procedures nationwide in order to establish consistent regional practices as well as to remedy discriminatory access to the grid. The order establishes procedures and agreements for interconnecting new generation greater than 20 MW to the transmission system, and a pricing policy for new interconnections. It affords ISOs and Regional Transmission Organizations significant discretion, under a newly established "independence" standard, to develop and propose procedures and policies that work for their respective regions. The ISO must file its Compliance Filing no later than January 20, 2004.

In summary, Management's proposed policy recommendations are that:

- 1) The ISO offer a generic interconnection service that would provide interconnection customers with the flexibility to "customize" the type of interconnection service they prefer, based on the amount of transmission upgrades they are willing to sponsor and fund. However, as a minimum threshold, all generators will be required to sponsor or fund any reliability-related transmission upgrade necessary as a result of their interconnection.
- 2) The ISO and Participating Transmission Owners follow the basic interconnection application and study process that FERC established in Order 2003. However, the ISO proposes some limited extension of the study process timeline to enable the ISO to provide oversight of the PTO interconnection studies.
- 3) The ISO propose that generators can elect to receive either "credits," as defined further below, or Firm Transmission Rights (i.e., as defined under the Market Design 2002 proposal, Congestion Revenue Rights) as compensation for initially funding or paying for the transmission upgrades related to their interconnection request.

- 4) As a necessary complement to the pricing policy outlined in (3) above, and consistent with the ISO's obligation to provide for the cost-effective and efficient expansion of the transmission system, the ISO conduct an economic analysis regarding the cost and benefits of the transmission upgrades associated with new requests by generators to interconnect to the grid.

and

- 5) The ISO propose and establish the "deliverability" test or standard, as detailed in the attachments to this memorandum, by which each interconnecting generator will be evaluated to determine if the output of such generator can be delivered to load on the system.

Management's recommendations are summarized further below and in **Attachment B** to this memorandum.

As previously discussed with the Board, there are critical interdependencies between these recommended policies and two parallel processes – resource adequacy and MD02 implementation. Certain aspects of the FERC rule are linked to, and work well with, clear resource adequacy rules. As the Board is aware, and as outlined in another Board memorandum, the California Public Utilities Commission ("CPUC") is on course to issue a final order regarding utility procurement rules on December 18, 2003. One element of that ruling is likely to be the "deliverability" issue outlined above. The rule is also likely to shape the future definition of "capacity" resources in the state. Once again, the definition of and rules regarding capacity resources will ultimately shape the type of interconnection service offered by the ISO.

As to the interrelationship with MD02 implementation, the ISO's proposed pricing policy for interconnection-related transmission upgrades, as summarized above, is tightly related to the ISO's ability to offer Firm Transmission Rights or Congestion Revenue Rights as compensation to generators that fund transmission upgrades. Under today's zonal market design, the ISO can only offer FTRs for new or upgrades to "Inter-Zonal" pathways (i.e., transmission paths between zones). Once MD02 is implemented, the ISO should be able to offer CRRs for practically all new or upgraded transmission lines.

These interrelationships have necessarily constrained or limited the policy options available to the ISO with regard to the FERC rule. Thus, the policy recommendations proposed herein will likely have to be revisited once these other matters have been resolved. Consistent with Management's previous commitment regarding the MD02 proposal, Management recommends that the Board commit to revisit this proposal once final procurement rules have been established and once FERC has issued a final order regarding MD02. Finally, while there are appealing arguments for not proposing any changes to the ISO's interconnection policy at this time and instead wait until both the procurement and MD02 proceedings are completed, Management does not recommend to do so. While the proposed policies may be interim in nature, they nonetheless serve to clarify and enhance the ISO's existing interconnection process.

Management recommends the following motion:

***MOVED, that the ISO Board of Governors, authorizes the ISO management to prepare and subsequently file at the Federal Regulatory Commission by January 20, 2004 a Compliance Filing that incorporates and reflects the policy recommendations contained in the memorandum dated November 25, 2003, and the Attachment B thereto.***

## Background

On July 24, 2003, FERC issued Order 2003. The order is the culmination of a two-year effort to reform and standardize interconnection procedures nationwide in order to establish consistent regional practices as well as to remedy discriminatory access to the grid. Order 2003 establishes procedures for interconnecting new generation (greater than 20 MWs) to the transmission system. In addition to establishing detailed new procedures and interconnection agreements, the FERC rule establishes the pricing policy applicable to new interconnections. Finally, the FERC order affords ISOs/RTOs significant discretion, under a newly established "independence" standard, to develop and propose procedures and policies that work for their respective regions.

Order 2003 directed all jurisdictional public utilities to file conforming tariff language and *pro forma* procedures and the appropriate interconnection agreement by October 20, 2003 (60-days after publication of the rule in the Federal Register). Since publication of the rule, ISO staff has been engaged in discussions with the affected transmission owners as well as the CPUC to formulate a plan for responding to the rule and making the requisite Compliance Filing. To allow additional time to broaden the discussion to other market participants and prepare a responsive filing, the ISO, CPUC and affected Participating Transmission Owners asked FERC for an extension of time to file the Compliance Filing (an additional 90 days). On September 26, 2003, FERC granted that request and directed the ISO to file its Compliance Filing no later than January 20, 2004.

Order 2003 includes *pro forma* titled "Large Generator Interconnection Procedures" that detail the interconnection process to be followed from the time an interconnection request is received until the signing of an Interconnection Agreement. Such procedures include specific deadlines for completing the kinds of technical studies that determine the impact of the new generator upon the grid, and therefore the type and cost of equipment needed to upgrade the grid to accommodate the output of the new generator reliably.

In addition, Order 2003 also includes a *pro forma* Large Generator Interconnection Agreement. This agreement is the legal contract between the developer of a new power plant that is seeking interconnection and the "Transmission Provider." With respect to regions where there is an ISO/RTO, the order provides that such agreements be three-party arrangements between the new generator owner, the transmission owner and the ISO/RTO.

Finally, Order 2003 codifies FERC's policies with regard to the pricing of interconnection service or who pays the cost of the facilities necessary to interconnect the new generator to the grid. Order 2003 provides that generators are responsible for the cost of direct connection facilities (i.e., the facilities from the generator to the grid) and that, with respect to interconnection requests processed by "non-independent" transmission providers (i.e., transmission providers that are not an ISO/RTO), generators are responsible for initially funding the network transmission upgrades necessary to interconnect them to the system, but will receive a "credit" so that their money is refunded over five years. At the end of five years, the total cost of the network upgrades would be "rolled into" the transmission owners' revenue requirement.

Of particular importance to the ISO, Order 2003 also establishes a new "independence" standard that allows ISOs and RTOs significant discretion to fashion interconnection procedures and policies that work for their regions.

## Stakeholder Process

As reported to the Board previously, ISO staff has been engaged in discussions with the PTOs, CPUC and stakeholders, with the objective to develop the FERC filing necessary to comply with FERC's Order 2003. The salient steps and elements of the stakeholder process were as follows:

- October 1      ISO published "White Paper" re Large Generation Interconnection Rule
- October 21     ISO hosted first stakeholder meeting

- October 28 ISO published preliminary ISO positions on Order 2003
- November 3/4 ISO published revised White Paper on Order 2003 and proposed Deliverability Test
- November 6 Stakeholders provided second round of comments
- November 12 ISO hosted second stakeholder meeting
- November 20 Stakeholders submitted final round of comments

Through the stakeholder process the ISO was able to vet with stakeholders each of the policy issues and recommendations outlined above.

**Attachments A and C** provide further information regarding stakeholder comments.

### **Interconnection Process**

In June 2002, FERC approved Amendment 39 to the ISO tariff, which established the current ISO process for interconnecting new generating units to the ISO Controlled Grid, subject to the outcome of Order 2003. In general, the process and timelines for receiving and reviewing interconnection applications proposed in Order 2003 are consistent with the ISO's current practices under Amendment 39. Management of the interconnection request process (queue management) will remain the same, with the ISO managing one study queue for the entire ISO Controlled Grid.

The key changes to the interconnection process resulting from Order 2003 include:

- The addition of a Scoping Meeting early in the application process to get the parties together to share information and reach agreement on the points of interconnection to be included in the system studies.
- A formal process for conducting feasibility studies, where previously an interconnection request went directly to a system impact study. The new Interconnection Feasibility Study gauges early on whether it is practical to interconnect at a particular proposed point of interconnection.
- Interconnection study agreements and the interconnection agreement itself are now standardized *pro forma* across the ISO Control Area, where previously the agreements were PTO-specific. In addition, Order 2003 provides that in regions where an ISO is the transmission provider, the interconnection agreements should be three-party agreements between the generator, transmission owner and the ISO.

The ISO and PTOs are in general support of these changes. The ISO also believes that there is an additional benefit to being a party to the interconnection agreement that is not currently available in the current two-party arrangement between just the interconnection customer and the PTO.

### **Interconnection Service**

Order 2003 proposes two forms of interconnection service, Network Resource Interconnection Service and Energy Resource Interconnection Service. Under this construct a new interconnection customer that requests interconnection can be studied and subsequently treated in the market as either (1) an "Energy Resource" where it is interconnected to the grid and uses existing space on the transmission system on an "as-available" basis; or (2) a "Network Resource" where the interconnection customer must be treated the same as native generation and fully integrated into the system. In Order 2003, an interconnection customer that requests to be treated as a Network Resource is required to fund delivery upgrades.

However, FERC's proposed interconnection service construct is not meaningful in the California market at the present time. The concept of a "Network Resource" or a capacity resource that is available and deliverable to all load on the system works well in a market with clear capacity market or obligation rules, such as those in place in

many of the eastern markets. However, as the Board is aware, California is only now in the process of developing such rules; the rules likely to be developed as a result of the CPUC's procurement proceeding.

Therefore, in its Compliance Filing the ISO proposes to define and establish a *generic* interconnection service under which interconnection customers can elect varying levels or quality of service, depending on the level and amount of transmission upgrades they are willing to sponsor. Under the ISO's proposed generic interconnection service, one base level of interconnection service would be offered that would assure reliable interconnection, and generators could then elect a higher quality of service by paying for certain transmission upgrades. Deliverability of the plant's output to the ISO grid could be assured for a specific set of system conditions by sponsoring additional transmission upgrades. The ISO will offer this generic interconnection service until the broader rules pertaining to resource adequacy (i.e., capacity obligations) have been defined. Once defined and once FERC issues an order on MD02, Management recommends that the ISO revisit this issue.

### **Interconnection Studies and Proposed Deliverability Test**

Under the ISO proposal, interconnection studies will be conducted as they presently are, with the addition of the new Scoping Meeting and Interconnection Feasibility Study discussed above. However, there are some important differences, discussed below.

- The ISO has added additional time in the study process beyond what FERC provided in Order 2003 for the ISO to provide review and comment on the studies.
- More comprehensive information on each interconnection request will be posted on the ISO web site.
- The ISO proposes that a new Deliverability Test be included in the system studies process to help identify the transmission facilities that are needed to get the full output of a new resource to load under peak system conditions. By identifying needed delivery-related facilities, which is something that is not done now, market participants will be provided useful information to assess the deliverability of new resources to the grid. Specifically, the Deliverability Test will define a generic deliverability benchmark to assess the deliverability risk for a given proposed new resource. It will be modeled after the methodology already approved by FERC and currently used by PJM. It will be performed under a peak load and resource adequacy perspective to determine if, with the interconnection customer's generating resource operating at full output, the aggregate of generation can be delivered to the aggregate of the ISO Control Area load. It would objectively identify the incremental impacts on the grid of a new interconnection customer's proposed generating resource.

### **Payment/Pricing Policy**

Under the ISO's proposal, interconnection customers would be required to fund the Interconnection Facilities needed to physically interconnect the facility to the point of interconnection with the grid. This represents no change from current practice. The cost of these "exclusive use" facilities would continue to be the sole responsibility of the interconnection customer and would not be reimbursed.

With respect to Network Upgrades (i.e., those transmission upgrades beyond the point of interconnection to the grid, be they Reliability Network Upgrades or Delivery Network Upgrades) the ISO proposes that Interconnection customers initially fund these upgrades, and then elect to receive either (1) transmission credits over a five-year period (i.e., reimbursement for the costs of the upgrades plus interest); or (2) applicable property rights (FTRs at present, or, in the future, CRRs) as compensation for funding/paying for the upgrades. If the interconnection customer does not elect to fund such facilities, the PTO could build such facilities. In fact, the ISO proposes to specifically provide that in instances where a new generator elects not to fund upgrades, the ISO may direct the applicable PTO to do so under its existing authority in the ISO Tariff.

On a long-term basis, the ISO envisions transitioning to a policy wherein generators receive *only* FTRs/CRRs as compensation for funding/paying for transmission upgrades. (However, the ISO may still provide credits for funding upgrades with which no FTRs or CRRs are associated). By linking the reimbursement of network upgrades solely with the value of the property rights (i.e., FTRs/CRRs) that are created, generators will be more sensitive to the costs of the upgrades, the impact on the grid, and the benefits of the associated property rights.

In the interim, however, the ISO believes the proposed crediting policy is clear, fair and may reduce barriers to building new generation. In the current pre-MD02 environment, the ISO is not able to offer FTRs with measurable value within transmission zones (i.e., for Intra-Zonal transmission facilities) so the ISO agrees with many stakeholders that the crediting policy is the best way for now to compensate developers for transmission grid improvements that benefit everyone. Moreover, while not completely eliminating cost-responsibility based barriers to entry, the crediting policy should ameliorate a developer's perceived risk of having to pay for necessary but expensive transmission upgrades on the system. ISO management recommends that the ISO revisit this policy once MD02 is implemented and viable financial property rights (CRRs) are available.

### **Economic Test**

Management proposes to perform an Economic Test of transmission upgrades costing more than \$20 million, or another appropriate threshold, to determine the extent of the benefits resulting from the transmission upgrade, and use that amount as a *de facto* cap on the level of credits that could be offered to the interconnection customer for upgrades to the grid. In instances where the costs of the upgrade exceed this cap, if the interconnection customer funded the full amount of the upgrades, the interconnection customer will receive, if applicable, the associated property rights.

The reason for this cost-benefit test is to guard against egregiously expensive projects, especially since the generator would recover the full cost of network upgrades within five years regardless of the location of the plant or the availability of other sites that might require less expensive upgrades. Without some locational price signal, a reasonable backstop is needed to assure that all ratepayers are not paying for uneconomic projects. However, such an economic analysis is not intended to delay or create obstacles to new generation, and its application would be limited to large projects beyond a certain threshold level (e.g., \$20 million.)

### **Reliability and Deliverability Upgrades Distinction**

Amendment 39 established the concept of Reliability Upgrades and Deliverability Upgrades to distinguish between the upgrades that are necessary to (1) interconnect a new facility safely and reliably to the ISO Controlled Grid that would not have been necessary but for the new facility (i.e., Reliability Upgrades); and (2) relieve constraints on the ISO Controlled Grid to ensure the delivery of energy from a new facility to load (i.e., Delivery Upgrades).

In Order 2003, FERC proposes that a single "Network Interconnection Service" be offered. The ISO proposes to retain the current Amendment 39 distinction in ISO markets between reliability and network upgrades, because parties need to know what facilities are required to interconnect a resource to the grid and what is optional to assure delivery of the full output of the resource. The ISO will propose in its filing that the terms "Reliability Network Upgrades" and "Delivery Network Upgrades" be used to clearly distinguish between these two types of network upgrades.

### **Summary and Recommendation**

The above outlined policy recommendations are the product of close collaboration between the ISO and affected PTOs as well as the result of the focused stakeholder process outlined above. The proposed policies are practical, workable and represent a step forward in establishing efficient market rules. Management requests that the Board approve the following motion:

**MOVED, that the ISO Board of Governors, authorizes the ISO management to prepare and subsequently file at the Federal Regulatory Commission by January 20, 2004 a Compliance Filing that incorporates and reflects the policy recommendations contained in the memorandum dated November 25, 2003, and the Attachment B thereto.**



## FERC Large Generator Interconnection Rule

### - Pricing and Service Issues -

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*Purpose: The purpose of this paper is to summarize key aspects of the pricing and service provisions of FERC's Final Rule regarding large generator (>20 MW) interconnections. In addition, the paper summarizes the key pricing and service provisions of the ISO's current interconnection procedures, as established in Amendment No. 39 to the ISO Tariff. In the end, the purpose of this paper is to identify certain of the key pricing and service policy issues regarding interconnection service and to solicit feedback from Market Participants. Finally, the views expressed in this paper are preliminary and are intended to facilitate discussion of the issues. They do not reflect a formal or final position of the ISO on these matters.*

#### **I. Assumptions**

The following assumptions were made for purposes of developing this "White Paper":

1. The ISO and PTOs will start with the *pro forma* interconnection procedures and agreement adopted by FERC in the final rule when developing their compliance filings;
2. The ISO as an independent transmission provider has the flexibility granted by FERC to develop interconnection policies in a manner that work best for California;
3. The distinction between "Reliability Upgrades" and "Delivery Upgrades" as originally defined in Amendment No. 39 to the ISO tariff, will be retained for purposes of developing the new interconnection procedures.
4. Consistent with FERC's finding that Interconnection Service is distinct from Transmission Service (Final Rule ¶ 756, 757), for purposes of the ISO's Day-Ahead Scheduling and Congestion Management practices, all generating resources will be treated the same, subject to any operating constraint agreed to by the resource owner and the ISO as part of the interconnection process.

*Feedback Requested: Please provide the ISO feedback regarding the assumptions identified above. In particular, the ISO requests feedback regarding the distinction between Interconnection service and Transmission service, and the assumption that all resources should be treated comparably for purposes of the ISO's Scheduling and Congestion Management protocols.*

#### **Stakeholder Comments**

**Calpine** agrees with Assumption 1 and 2 but recognizes that some deviation from *pro forma* language may be unavoidable. Calpine emphasizes that

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deviations should be approached with “utmost trepidation” to avoid magnifying seams issues and losing the potential benefits to be gained from standardization.

Calpine suggests the definitions in Assumption 3, as well as other tariff terms, should be discussed as part of the underlying pricing and service issues.

Calpine suggests Assumption 4 is inappropriate as a starting assumption because there currently are no Network Resources that can be treated distinctly within the ISO's Transmission Service.

Calpine suggests three additional Assumptions:

- Departures from FERC's current transmission credit-back policy are permitted only when an ISO/RTO determines the cost causation of the network upgrades (Final Rule ¶ 677.)
- No “and” pricing is permitted (Final Rule ¶ 700.)
- The legal and contractual rights of existing generators, including QF must-take generation, will be honored.

**Coral** disagrees that the ISO has flexibility as an independent entity.

Coral seeks to abolish the distinction between Reliability Upgrades and Deliverability Upgrades in Assumption 3.

Regarding Assumption 1, **Mirant** comments that any variation from the Final Order merits close scrutiny. Mirant supports the Final Rule as written but is willing to consider appropriate variations.

Mirant accepts the four Assumptions but suggests a more explicit match between ISO terms and FERC terms, specifically that “Reliability Upgrades” are required for “Energy Resource Service” and “Deliverability Upgrades” are necessary for “Network Resource Service.”

**PG&E** urges considerable flexibility in the adoption of pricing and service provisions and urges the ISO to recognize the state's transition to a redesigned framework.

**SCE** supports Assumptions 1, 2, and 3. Regarding Assumption 4, SCE notes that RMR generators and hydro units already are treated differently from other generators. SCE recommends changing the language in a way that emphasizes the distinction between interconnection service and transmission service.

### Preliminary ISO Response

The ISO's flexibility as an “independent entity” will be critical to the development of a Compliance Filing that meets FERC objectives. This flexibility is needed

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because the ISO – working with stakeholders -- is trying to fit this new “standardized” interconnection policy into California’s unique situation, which currently includes the absence of a resource adequacy requirement, the absence of a way for valuing resource capacity, and the uncertainty of the specific value of FTRs in an evolving market design.

Many of the key features of Order 2003 assume and rely upon a resource capacity requirement or a functioning capacity market from which Generators can receive value for their investments. For example, several stakeholders point out that the value of Network Resource Interconnection Service is limited in the current paradigm. The ISO readily agrees it cannot demonstrate the benefits of “Network” service until a state resource adequacy requirement is established. The ISO expects that California’s resource adequacy requirements may significantly alter the value of “Network” interconnection service, and therefore has proposed an interconnection service that permits a variety of upgrades with their associated benefits.

Clearly, the ISO and stakeholders should expect review and improvements in this interconnection service as circumstances change. Thus, while the ISO seeks to implement by the January 20, 2004, deadline the most workable interconnection policy under the current circumstances, the ISO emphasizes that specific features of this Compliance Filing will subsequently evolve as significant changes are made in the procurement requirements of the state.

The ISO reiterates its intention to use the FERC *pro forma* procedures and agreement as the starting point for its Compliance Filing, but suggests that some differences are inevitable and necessary. For example, the ISO and Transmission Owners are working diligently to clarify specific roles and responsibilities for the “Transmission Provider,” a term that is frequently cited in the *pro forma* LGIA and LGIP. These *pro forma* documents are the starting point for the Compliance Filing, but some specificity is needed to determine the execution of duties required by the “Transmission Provider” as they apply to the ISO and transmission owners in California.

At this time the ISO intends to keep the distinction between “Reliability” and “Delivery” upgrades because it helps frame the range of options available within the generic interconnection service being proposed by the ISO (see Appendix A.) To be specific, “Reliability” upgrades would be the minimum investment (beyond the first point of interconnection) needed to interconnect safely and reliably to the ISO Controlled Grid. “Delivery” upgrades would consist of a range of upgrades (beyond the first point of interconnection) that could meet, in whole or in part, a deliverability test. Further, the ISO intends to propose refinements to these definitions to clarify that both “Reliability” and “Delivery” upgrades are Network upgrades (as FERC as defined) -- and thus both would be eligible for crediting paybacks to the generator under the ISO’s Preliminary Position, as described in Appendix A.

## **II. Definitions**

The following definitions were taken directly and without modification from the FERC Order 2003 and the ISO Tariff.

### *FERC Final Rule*

***Interconnection Facilities*** – Transmission Provider's Interconnection 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, addition, upgrades that are necessary to physically and electrically interconnect the Generating facility to the Transmission Provider's Transmission System. These Interconnection Facilities and/or equipment include both those owned by the Transmission Provider or the Interconnecting generators. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades (Final Rule Appendix C at p.6).<sup>1</sup>

***Network Upgrades*** – Additions, modifications, and upgrades to the Transmission Provider's System required at or beyond the point at which the Interconnection Customer interconnects to the Transmission Provider's Transmission System to accommodate the interconnection of the Large Generating Facility to the Transmission Provider's Transmission System (Final Rule Appendix C at p.9).

***Stand Alone Network Upgrades*** - Network Upgrades that an Interconnection Customer may construct without affecting day-to-day operations of the Transmission System during their construction. Both the Transmission Provider and the Interconnection Customer must agree as to what constitutes Stand Alone Network Upgrades and identify them in Appendix A to the Standard Large Generator Interconnection Agreement (Final Rule Appendix C at p.11).

### *Amendment No. 39*

***Direct Assignment Facilities*** – The transmission facilities necessary to physically and electrically interconnect a New Facility Operator to the ISO Controlled Grid at the point of interconnection (ISO Tariff, Appendix A Master Definitions Supplement).

***Reliability Upgrade*** – The transmission facilities, other than Direct Assignment Facilities, beyond the first point of interconnection necessary to interconnect a New Facility safely and reliably to the ISO Controlled Grid, which would not have been necessary but for the interconnection of a New Facility, including network upgrades necessary to remedy short circuit or stability problems resulting from the interconnection of a New Facility Operator to the ISO Controlled Grid. Reliability Upgrades also include, consistent with WSCC practice, the facilities

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<sup>1</sup> The ISO's use of this definition of Interconnection Facilities is not intended to assume or recommend a definition or description of Interconnection Facilities that could be used for or against any party, which is litigating in pending FERC proceedings whether or not certain facilities are Interconnection Facilities.

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necessary to mitigate any adverse impact a New Facility's interconnection may have on a path's WSCC path rating (ISO Tariff, Appendix A Master Definitions Supplement).

***Delivery Upgrade*** – The Transmission Facilities, other than Direct Assignment facilities and Reliability Upgrades, necessary to relieve constraints on the ISO Controlled grid and to ensure the delivery of energy from a New Facility to Load (ISO Tariff, Appendix A Master Definitions Supplement)

### **III. Summary of Pricing Provisions**

#### *FERC Rule & Amendment No. 39*

The cost responsibilities for Generators under FERC's Final Rule fall into two broad categories: Interconnection Facilities and Network Upgrades. Under the FERC rule, Generators will be responsible for the cost of all Interconnection Facilities. This requirement is consistent with the ISO's current rules regarding the treatment and obligation to pay for Direct Assignment Facilities (as defined above). (¶ 676, 693)

With respect to Network Upgrades, the FERC rule essentially establishes a paradigm where all Network Upgrades (as defined above) are initially funded by the interconnecting customer (unless the Transmission Provider elects to fund them), but the costs of such upgrades funded by the generator are then either credited back to the customer over a five-year period or the customer is provided the property rights associated with the upgrades. The FERC Rule does not specify whether the Interconnection Customer is afforded the option of electing either credits or FTRs/CRRs, or whether each Transmission Provider or ISO/RTO can select an option (¶ 694-703).

Specifically, the FERC rule establishes two different pricing rules, one for "non-independent" Transmission Providers and one for "independent" Transmission Providers (ISOs/RTOs). For non-independent Transmission Providers, FERC essentially formalizes the "crediting" requirement proposed in the NOPR and previously required of individual Transmission Providers in separate cases (see PG&E's *Los Madanos* case and Edison's *Wildflower* case). Under such a requirement, while Transmission Providers can require a customer to initially fund a Network Upgrade, the Transmission Provider must pay the customer back, within a five-year period, by establishing a credit to the customer's transmission charges. Regardless of the level of transmission charges over that five-year period, the customer must be repaid in full by the end of five years. The crediting requirement and mechanism is not effective until the new generator reaches "Commercial Operation" (see generally ¶ 720-735).

In the Final Rule, FERC stated that independent Transmission Providers will be afforded a great deal of discretion in fashioning pricing proposals for their regions. FERC stated that in regions such as PJM, NY and NE with bid-based congestion management mechanisms and LMP, they would continue to support pricing proposals that would require generators to pay for "but for" Network

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Upgrades (i.e., upgrades that would not be necessary “but for” the interconnection of the customer) in exchange for giving the customer the FTRs (or applicable financial hedging instrument) associated with the necessary upgrade (see generally ¶¶ 26, 28, 822-827)).

In contrast, under the ISO’s existing Amendment No. 39 procedures, new generators interconnecting to the system may be required to pay (i.e., fund and *not* receive a credit) for Reliability Upgrades (as defined above) required in order to interconnect them to the system. The only exception to this requirement provided for under the current rules is in the case where the Reliability Upgrades identified as part of the interconnecting customer’s request are already included in the ISO/Transmission Owner’s annual expansion plan. In addition, should the interconnecting customer voluntarily agree to pay for Delivery Upgrades (as defined above) in order to deliver its full output to load under a specified set of system conditions, Amendment No. 39 does not provide that the customer should receive any kind of “credit” for such upgrades (although the ISO Tariff does provide that, if appropriate, the customer could receive the FTRs associated with the upgrade). However, notwithstanding FERC’s acceptance of these pricing provisions in Amendment No. 39 – subject to the outcome of the rulemaking proceeding – as noted above, FERC separately required Transmission Owners to establish “crediting” mechanisms under their stand-alone Interconnection Agreements with specific generators.

*Feedback Requested: Please provide the ISO feedback regarding the summary and conclusions of the Final Rule. In particular, the ISO requests feedback regarding FERC’s stated pricing policies regarding Network Upgrades, especially as they relate to the ISO’s existing pricing policy for upgrades as codified in Amendment No. 39 to the ISO Tariff, as filed. In addition, and as further detailed below, the ISO requests feedback from Market Participants regarding the need for both an interim pricing policy (for the period prior to implementation of the ISO’s Market Design 2002 proposal and prior to the establishment of more formal resource adequacy rules in California) and a long-term policy.*

### Stakeholder Comments

**Calpine** suggests the Final Rule does not establish two different pricing rules for independent and non-independent Transmission Providers. Rather, Calpine argues the Final Rule outlines two standards of review that FERC will use to evaluate deviations from the *pro forma* policies and agreements.

Calpine suggests that, since non-independent Transmission Owners perform the technical studies that determine Network Upgrade costs, California should adhere to FERC’s policy that Interconnection Customers be awarded transmission credits for network upgrades.

Calpine prefers consistency in market rules, and suggests that tariff changes should be implemented once even if this requires some initial delay in Final Rule implementation.

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**Coral** argues the ISO must discard Amendment 39 procedures and policies and adopt the Final Rule that requires all upgrades beyond the first point of interconnection to be considered network upgrades.

Coral argues there should be no distinction between an interim and a long-term pricing policy.

**Mirant** supports the five-year crediting policy. Offering FTRs/CRRs as an alternative is reasonable, so long as the funder can choose either option and not be forced to accept financial instruments which may lose value as the congestion is eliminated.

Mirant cannot initially understand why separate interim and long-term policies are needed, but is interesting in hearing arguments for this structure.

**PG&E** generally urges the ISO to adopting pricing policies that give incentive to generators to find locations that reduce the cost of interconnection upgrades.

**SCE** supports current provisions holding generators responsible for the costs of sole-use facilities. SCE suggests the White Paper should clarify that the CAISO Tariff does not provide for transmission credits to generators that fund Reliability Upgrades, but that generators receive credits (with interest) because of PG&E's *Los Medanos* and SCE's *Wildflower* cases.

### Preliminary ISO Response

The ISO initially proposes a five-year crediting policy that is consistent with the Final Rule, whereby Generators can choose either transmission credits or property rights equivalent to the network upgrades that are constructed. This cost recovery method would apply to all network upgrades at or beyond the point of interconnection, including both "Reliability" upgrades and "Delivery" upgrades.

The ISO clarifies this policy would not extend to sole-use facilities or Direct Assignment Facilities.

The ISO believes this crediting policy is clear, fair and provides appropriate incentives for building new generation at this time. When LMP is fully implemented and the ISO is able to offer FTRs with measurable value throughout the state, the ISO expects to review this crediting policy (with full stakeholder participation) to make sure consumers are well-served and that locational price signals are not muted by this credit back policy.

### IV. Definition of Interconnection Service

FERC's Final Rule regarding generator interconnections requires that Transmission Providers offer two forms of Interconnection Service. These services are defined below. It is important to note that the FERC rule clearly states that with respect to both services neither service conveys a right to *transmission* service. Thus, under FERC's rule, while a generator can request interconnection to the Transmission Provider's grid, such a request does not

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constitute a request for transmission service and that such transmission service must be separately requested and provided pursuant to the terms of the Transmission Provider's Open Access Tariff. (§§752, 767, 769)

*Network Resource (NR) Interconnection Service*

FERC defines NR Interconnection Service as follows:

***Network Resource Interconnection Service*** – An Interconnection Service that allows the Interconnection Customer to integrate its Large Generating Facility with the Transmission Provider's Transmission System (1) in a manner comparable to that in which the Transmission Provider integrates its generating Facilities to serve native load customers; or (2) in an RTO or ISO with market based congestion management, in the same manner as all other Network Resources. Network Resource Interconnection Service in and of itself does not convey transmission service.

(Final Rule Appendix C at p. 9)

FERC characterizes NR Interconnection Service as "a more flexible and comprehensive interconnection service." FERC states that NR Interconnection Service would require that the Transmission Provider integrate the Generating Facility into the system on a comparable basis to other Network Resources so that, at full output, the aggregate of generation in the local area can be delivered to the aggregate of load, consistent with the Transmission Provider's reliability criteria and procedures. FERC states that under this approach, the Transmission Provider would assume that some portion of the capacity of existing Network resources is displaced by the output of the new Generating Facility. Thus, for purposes of developing its compliance filing, the ISO will develop the applicable criteria and parameters for evaluating and assessing requests for NR Interconnection Service (§§ 768, 784).

*Energy Resource Interconnection Service*

FERC defines ER Interconnection Service as follows:

***Energy Resource Interconnection Resource*** – An Interconnection Service that allows the Interconnection Customer to connect its Generating facility to the Transmission Provider's Transmission System to be eligible to deliver the Generating Facility's electric output using the existing firm or non-firm capacity of the Transmission Provider's Transmission System on an as available basis. Energy Resource Interconnection Service in and of itself does not convey transmission service.

(Final Rule Appendix C at p. 4)

FERC characterizes ER Interconnection Service as "a basic or minimal interconnection service". FERC states that in area with bid-based energy market (e.g., ISO New England, NYISO, or PJM), ER Interconnection Service would allow the Interconnection Customer to place a bid to sell into the market and the Generating facility would be dispatched if the bid is accepted. FERC



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states that in all other areas, no transmission service would be assured, but the Interconnection Customer may obtain transmission service pursuant to the Transmission Provider's Tariff. (¶ 753)

### *Basis for Requiring Different Interconnection Services*

Based on comments received during the NOPR process, FERC concluded that two different forms of Interconnection Service should be provided under the Final Rule. While FERC initially proposed to require only one form of Interconnection Service, a number of participants argued that FERC should require two different levels or quality of service, based on the customer's needs. The two qualities of service are differentiated in the interconnection studies by the standards for deliverability, and the likelihood that the higher level of service will not require the interconnecting generator to be curtailed for a specified set of peak system conditions. As noted, ER do not have to be deliverable for the same set of specified system conditions and thus are not required to pay for deliverability upgrades that the Transmission Owner may identify in its interconnection studies. NR, in contrast, are likely to be more deliverable since, in studying the interconnection, the transmission provider would consider "the transmission system at peak load, under severely stressed conditions, to determine whether, with the Generating Facility at full output, the aggregate of generation in the local area can be delivered to the aggregate load..." (FERC ¶ 755). In short, FERC establishes levels of service quality and appears to differentiate the interconnection services by its ability to service load under a specified set of stressed system conditions.

To that point FERC states that, "...the study for Network Resource Interconnection Service identifies the Network Upgrades that are needed to allow the Generating facility to contribute to meeting the overall *capacity* needs of the Control Area or *planning* region..." [emphasis added]. In addition, FERC states that, "The study then identifies the Network Upgrades that would be required to allow the Generating Facility *to be counted toward system capacity needs* in the same manner as the displaced resources." (¶ 784)

### *Study Requirements for the Different Services*

FERC states that the Interconnection Studies to be performed for ER Interconnection Service would identify the Interconnection Facilities required as well as the Network Upgrades needed to allow the proposed Generating Facility to operate at full output for a specified set of system conditions. In addition, the Interconnection Studies would identify the maximum allowed output of the Generating Facility without Network Upgrades for the same set of specified system conditions.

In contrast, FERC states that NR Interconnection Service would require the Transmission Provider to undertake studies and Network Upgrades needed to integrate the facility into the system. As described above, FERC provides that the Transmission Provider would study the Transmission System at peak load, under a variety of severely stressed conditions, to determine whether, with the facility at full output, the aggregate of generation in the local area can be

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delivered to the aggregate of load, thus allowing the Generating Facility to qualify as a Network Resource.

*Feedback Requested: Please provide the ISO feedback regarding the form and nature of Interconnection Service. Specifically, please provide feedback regarding the need for one or two forms of Interconnection Service, both on an interim basis (i.e., prior to MD02 or final resource adequacy rules) and on a long-term basis. In addition, please provide feedback on whether a "deliverability" requirement is a necessary or key component of Interconnection Service in general and, more specifically, Network Resource Interconnection Service. Finally, please provide feedback on the manner by which Interconnection Service requests, in general, but also ER Interconnection Service and NR Interconnection Service requests, should be studied for purposes of evaluating system impact.*

### Stakeholder Comment

**Coral** favors the two interconnection services in the Final Rule, and does not believe there should be any distinction between interim and long-term service.

**Mirant** has no objection to offering these two Interconnection services. Mirant believes system impact must be studied for every interconnection proposal, including projects seeking ER service, so that new interconnections do not impair the deliverability of any already connected resource.

**SDG&E** suggests at this time there is no need to offer NR since the transmission studies required for ER will identify the Network Upgrades needed to allow 100% output for a specified set of system conditions.

SDG&E notes that neither ER nor NR guarantee deliverability because actual grid conditions will differ from dated technical studies, and that only appropriately priced bids can assure deliverability.

SDG&E comments that the ISO can reevaluate whether to offer NR if and when a long term Resource Adequacy mechanism is in place.

**SCE** comments that it's premature for the CAISO to offer Network Interconnection Service without a fully developed Resource Adequacy requirement.

### Preliminary ISO Response

The ISO agrees that it would be premature to offer Network Resource Interconnection Service at this time. A key feature of NR outlined in the Final Rule includes the ability of a facility to "contribute to meeting the overall capacity needs" of the system. Without a capacity requirement on Load Serving Entities in California, or, more broadly, a resource adequacy framework, there are no established "capacity needs" and so this key feature for a generating facility is meaningless.

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The ISO is mindful of stakeholder comments about information that may be beneficial for the generator in making decisions about the most appropriate degree of network upgrades. An improved study process that includes a benchmark deliverability standard would offer benefits to all stakeholders. The ISO is developing a methodology for a deliverability study and invites stakeholder comments on the assumptions and parameters for such a study.

### **V. Pricing & Service Issues and Options**

*Interconnection Facilities/Direct Assignment Facilities* – The FERC rule and Amendment No. 39 are largely consistent with respect to the definition and pricing/cost-responsibility for Interconnection Facilities.

*Network/Reliability/Delivery Upgrades* – The final FERC rule and Amendment No. 39, as filed, diverge on the treatment of Network Upgrades.<sup>2</sup> While Amendment No. 39 provides that generators may be responsible for the cost of Reliability Upgrades and may also choose to fund Delivery Upgrades, FERC's final rule holds that while generators may be required to initially fund specific Network Upgrades, such customers must be refunded the cost of any such Network Upgrades over five years (at least with respect to non-independent Transmission Providers). For independent Transmission Providers, FERC provides that they can provide FTRs to those who upgrade the system or develop other region-appropriate pricing provisions in lieu of credits.

Thus, as an independent transmission provider, the CAISO has the flexibility afforded by FERC to fashion pricing and service provisions in a manner that best suits the region. Given this flexibility a number of options present themselves for redefining interconnection service under the ISO Tariff:

***Option 1:*** Conform the ISO's existing pricing and service provisions to those of the Final Rule.

As noted above, the Final Rule's pricing provisions regarding Interconnection Facilities are the same as those under Amendment No. 39 and therefore do not require change. With respect to Network Upgrades, we would most likely have to conform the pricing provisions to either offer "crediting" or property rights such as CRRs, as well as implement the concept of NR Interconnection Service.

#### *Summary of Features*

- Both Energy and Resource Interconnection Service Offered
- Credit Back or CRR to Generator
- Deliverability requirement for NR Interconnection Service

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<sup>2</sup> The ISO notes, however, that in accepting Amendment No. 39 to the ISO Tariff, FERC made the filing subject to the outcome of the Final Rule.

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- Could include a cost/benefit analysis

*Pros:*

- Acceptable to FERC because it is consistent with the Final Rule (i.e. mitigates the uncertainty of a new pricing or service methodology that is subject to a FERC decision);
- Includes a delivery requirement for NR Interconnection Service that will allow the ISO to require Network Upgrades necessary to deliver a resource's output to load for a specified set of system conditions;
- Allows the option of generator funding to mitigate the risk that ratepayers will have to pay for the development of transmission facilities that do not get constructed because the generator does not proceed with interconnection;
- NR Interconnection Service and/or a deliverability standard would provide generator greater certainty regarding the possibility of curtailments for purposes of congestion management; e.g. process, cost obligation, necessary upgrades that would avoid curtailments under a specified set of system conditions.
- Can be integrated with MD02 (LMP, CRRs) and a capacity requirement when they are developed/implemented;
- Works with or without a Reliability/Delivery upgrade distinction.

*Cons:*

- If a 5-year credit back is adopted by the CAISO may not provide sufficient price signals in new generator siting decisions, may result in uneconomic transmission expansion as FERC noted in Para.695;
- Full benefits of NR Interconnection Service to be defined under the state's resource adequacy or capacity rules.

***Option 2: Continue with the existing, effective Amendment No. 39 pricing and service provisions (including FERC's separate requirement that PTOs provide credits for Network Upgrades), as described above.***

As a result of FERC's statement that independent entities such as the CAISO can propose appropriate pricing provisions for their regions, the ISO could propose to retain the existing effective Amendment No. 39 pricing provisions (e.g., one interconnection service, no mandatory deliverability requirement, continue to require Reliability Upgrades and keep Delivery Upgrades voluntary at generator's discretion). This approach has some merit in light of the continuing concerns regarding the continuing development and implementation of MD02

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and resource adequacy. However, such an approach does not address concerns that the Amendment No. 39 pricing provisions have failed to result in proper (efficient) expansion of the grid.

### *Summary of Features*

- One Interconnection Service Offered
- Generator must fund Reliability Upgrades
- No deliverability requirement – i.e., Delivery Upgrades “voluntary”
- Credit Back to Generator
- CRR to Generator

### *Pros:*

- Tariff language, procedures largely already in effect;
- Avoids creating completely new products in a short time given continuing implementation of MD02, CRRs, and development of resource adequacy policy by the state;
- For all Reliability Upgrades and Delivery Upgrades pursued at the generator's discretion, not inconsistent with FERC's Final Rule (i.e. continue credit back for Reliability Upgrades and FTRs for Delivery Upgrades, if applicable);
- Mitigates risk of stranded transmission investment through generator funding of Network Upgrades (Reliability or Delivery);
- Can be integrated with MD02.

### *Cons:*

- Especially for the interim period prior to the implementation of either MD02 or resource adequacy rules (i.e., when Intra-Zonal Congestion continues to result in operational and economic efficiency problems), would continue to make Delivery Upgrades *optional* at the interconnection customer's discretion, which could result in new generation being added to the grid but insufficient transmission available to deliver the generation for a specified set of system conditions, even though the generator has a contract to sell energy to an LSE;
- Requires justification to FERC under an “independent entity standard” why NR Interconnection Service should not be offered by the ISO at this time;
- Lack of a NR Interconnection Service product creates uncertainty as to how deliverability will be addressed in context of a resource adequacy requirement.

***Option 3: Recognize current practice and existing markets in California, and modify Final Rule service definitions accordingly.***

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It is unclear what it means to “qualify as a Network Resource” in the current California market. Nevertheless, there can exist the notion of two different levels or quality of interconnection service, as described below. Requests for Interconnection Service in California currently do not include an initial choice of differentiated levels or quality of interconnection service. Rather, system impact studies identify the Network Upgrades necessary to accommodate the generating facility at full output, with the Transmission System at peak load, and under a variety of specified severely stressed system conditions. This “deliverability” variant could be the basis for modifying the Final Rule definition for “Network Resource Interconnection Service.”

A PTO could, at a developer’s request, determine the feasibility of allowing fewer Network Upgrades than would be required to accept full output of the generating facility during all hours of the year for a specified set of system conditions. It would be understood that these fewer Network Upgrades would increase the likelihood that the interconnecting generating facility would have to be curtailed, for purposes of congestion management, during certain of the specified set of system conditions. With the approval of the ISO, the Interconnection Customer could be given the option of moving forward with the less-than-full-output interconnection. If the Interconnection Customer opted for the less-than-full-output interconnection, the likelihood that the generator output could be curtailed increases. Note, Assumption 4 however, that the Interconnection Customer’s price/quantity bid, in comparison to all other bids, will determine whether or not the Interconnection Customer, or some other user of the grid, is ultimately curtailed, for purposes of congestion management, subject to any other operating constraints agreed to by the generator and the ISO. Such operating constraints would, by necessity, be detailed in the Participating Generator Agreement (PGA) between the ISO and the generator. Under this approach, the ISO would monitor and enforce and agreed-to operating constraints on the resource.

If codifying this approach to two levels of service were acceptable, the parties in the Order 2003 compliance process would need to articulate the steps in the process where less-than-full-output interconnection solutions might be identified (most likely during the system impact study process), approved by the ISO as acceptable operating constraints, and selected by the generator before undertaking the facilities study. Further, the parties would need to modify the definitions of “Network Resource Interconnection Service” and “Energy Resource Interconnection Service” accordingly.

This Option 3 would be compatible with several pricing variants. For example, the interconnecting generator could be provided with credited-back refunds within 5-years. Or, it could be provided with CRRs associated with the network upgrades. Or, it could be provided with a partial refunds and a partial CRR allocation as described in the pricing variation detailed below.

### *Summary of Features*

- One base-level service offered but generators could elect a low quality service by not paying for certain transmission upgrades

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- Deliverability not required but could be assured for a specified set of system conditions by sponsoring upgrades
- Credit Back to Generator
- CRR to Generator

*Pros:*

- Avoids creating completely new products in a short time given the continuing implementation of MD02, CRRs, and continuing development of a resource adequacy policy;
- Provides direction for conducting interconnection studies that specifically contemplate a less-than-full-output, ER Interconnection Service;
- Does not require development of a "deliverability" standard for Network interconnection service as part of the compliance filing;
- Allows the option of generator funding to mitigate the risk that ratepayers will have to pay for the development of transmission facilities that do not get constructed because the generator does not proceed with interconnection;
- NR Interconnection Service provides generator greater certainty that curtailments, for purposes of congestion management and under a specified set of system conditions, will not be required once the unit become operational;
- Can be integrated with MD02 (LMP, CRRs) and a capacity requirement when they are developed/implemented;
- Works with or without a Reliability/Delivery upgrade distinction.

*Cons:*

- 5-year credit back (to the extent that the CA-ISO adopts it) may be viewed as not providing appropriate signal for new generator siting decisions.
- Especially for the interim period prior to the implementation of either MD02 or resource adequacy rules (i.e., when Intra-Zonal Congestion continues to result in operational and economic efficiency problems), would continue to make Delivery Upgrades optional at the interconnection customer's discretion, which could result in new generation being added to the grid but insufficient transmission available to deliver the generation for a specified set of system conditions, even though the generator has a contract to sell energy to an LSE.

*Possible Pricing Variation - Optional Uneconomic Network Upgrade Test*

In order to address concerns that ratepayers may be required to fund Network Upgrades that do not provide them an economic benefit, a cost/benefit test could be administered by the ISO to determine the amount of benefits a ratepayer would receive from certain Network Upgrades. Under this approach, the ISO

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would provide credits for the portion of the Network Upgrades funded by an interconnection customer if the ISO determines the overall costs of the Network Upgrade necessitated by their interconnection exceeds the benefits to customers. This pricing variation is compatible with one or two-service approach and with or without a deliverability requirement. Under this pricing variation, any credit back or CRR to a Generator would but subject to a cost/benefit test

Under this option, following the completion of an Interconnection Facilities Study, if the estimated Network Upgrade costs exceed \$20 million, any party could formally request that the ISO perform an economic analysis for the Network Upgrades identified in the Study. The ISO would perform such a study, and would publish the results of the analysis in order that the results could be used as evidence in formal regulatory forums.

In paragraph 695, FERC recognizes that its crediting policy that generators be repaid for network upgrades within 5-years with interest mutes the generators incentive to make efficient siting decisions thus providing generators an improper subsidy. FERC then states:

Independently administered participant funding for network upgrades offers the potential to provide efficient price signals and more equitable allocation of costs than the crediting approach. The Commission notes that the transmission pricing policies that the Commission has permitted for an RTO or ISO with locational pricing, in which the Interconnection Customers bears the cost of all facilities and upgrades that would not be needed but for the interconnection of the new generating facility and receives valuable transmission rights in return, are acceptable forms of participant funding.

This option addresses the potential for uneconomic transmission expansion under the crediting proposal by leveraging the deference that FERC has granted independent entities such as the CAISO. This option safeguards against uneconomic transmission expansion in the interim while development of capacity rules by the state continues and MD02 implementation progresses.

*Pros:*

- Addresses concern that uneconomic Network Upgrades would get rolled-into consumer rates.
- Under this approach, any consideration of the merits in a specific generator interconnection docket at FERC would require evidence, e.g., a cost/benefit analysis. The analysis is likely to be very technical, and FERC will likely be more receptive to independent analysis by the ISO. Such a FERC case is likely to occur long before the CPUC gets a CPCN application to hear; and the CEC may want to hear about the cost and environmental impacts of the Network Upgrades when it hears the generator's AFC. Moreover, FERC has suggested that the ISO has the authority and responsibility to perform



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cost/benefit analyses. See 10/25/02 Order in ER02-1330. At Paragraph 42, FERC rejected PG&E's proposed reservation of a right to deny credits if a project is found to be not cost-effective, on the ground that PG&E's proposal was not well defined, and also because the ISO already has this authority.

### *Cons:*

- Since the ISO is still developing a standard "economic test", any project that warrants an economic review in the interim will be evaluated on a case-by-case basis until the ISO completes its economic methodology.
- Uncertainty as to how a FERC determination of just and reasonable transmission costs, based on their acceptance of a signed LGIA, would be considered in the CPUC/CEC permitting processes for new construction.

### Stakeholder Comments

**Calpine** opposes the Uneconomic Network Upgrade Test. Calpine suggests the small risk of uneconomic projects does not justify the creation of a new test for determining pricing.

Calpine suggests FERC is unlikely to permit the CAISO to deviate from the *pro forma* pricing terms.

**Coral** finds flaws in all three options and reiterates its support for the pricing and service provisions in the Final Rule. Coral specifically disagrees with the discussion in Option 1 stating that a 5-year credit back does not provide sufficient price signals in generator siting decisions. Coral believes reliance on a locational pricing signal is unfair and discriminatory to new generators, and is impractical because there aren't enough sites for new power plants.

Coral opposes Options 2 and 3 because they deviate from the Final Rule and continue to rely on existing practices.

**The Department of Water Resources – State Water Project (SWP)** urges clear definition of the "Point of Interconnection" as the point at which the facility interconnects with the ISO Controlled Grid, whose costs are included in the TAC.

SWP favors a participant funding approach rather than a crediting policy for network upgrades.

SWP also supports an economic cost-benefit analysis for all network upgrades.

**FPL Energy** supports continued awarding of FTRs/CRRs for transmission enhancements funded by third parties and not credited back to generators. The allocation of CRRs for these Transmission-Only interconnections should not be subject to CAISO cost/benefit test.

**Mirant** initially supports Option 3, which explicitly ensures resources that don't pay for deliverability upgrades must accept "operating constraints." Option 1 is Mirant's next choice, or its first choice if there is misunderstanding about Option 3. Mirant argues against a pricing variant that employs a cost/benefit test.

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**PG&E** favors Option 3. PG&E believes the “default” interconnection service would be NR, but that the ISO can offer the option of ER with possible curtailment of output for purposes of congestion management.

PG&E supports the proposed pricing variation for uneconomic upgrades. PG&E supports the concept for allowing any party to request an ISO cost/benefit analysis if estimated Network Upgrades exceed \$20 million.

**SCE** comments that it’s premature for the CAISO to offer Network Interconnection Service without a fully developed Resource Adequacy requirement. SCE believes the criteria for qualifying as a “capacity” resource and a deliverability standard should continue to be part of the CPUC’s long-term procurement process.

SCE believes that Reliability Upgrades, and Deliverability Upgrades found to be cost-effective by the ISO, should be constructed by the PTO and the costs should be recovered through the TAC. SCE suggests that Delivery Upgrades that are not found cost-effective would not be rolled-in to the TAC, but the generator should be allowed to fund the upgrade if it chooses and would then receive FTRs/CRRs. SCE believes the PTO should own all Network Facilities, regardless of who funds the Upgrade.

**Sempra Energy Resources** (SER) supports Option 1.

### Preliminary ISO Response

The ISO’s initial proposal most resembles Option 3 in that it features a base level of interconnection service with varying levels of network upgrades, and a 5-year credit back for the cost of those upgrades. This proposal appears to fit best with California’s current situation and offers the most flexibility for market participants now and in the future.

The ISO also proposes to conduct a cost-benefit test for large-scale network upgrades. The ISO believes a transparent and unbiased methodology should be in place to guard against egregiously expensive projects, especially since the generator would recover the full cost of network upgrades within five years regardless of the location of the plant or the availability of other sites that might require less expensive upgrades. Without some locational price signal, a reasonable backstop is needed to assure that all ratepayers aren’t paying for uneconomic projects. However, such an economic analysis is not intended to delay or create obstacles to new generation, and its application would be limited to large projects beyond a certain threshold level (\$20 million.)

### VI. Major Pricing and Service Issues

The above discussion identifies a number – but not all - of key policy questions that must be addressed in order to prepare the Order 2003 compliance filing. The following list, once again not to the exclusion of other issues, attempts to capture the salient policy issues and questions as partly outlined above.

- 1) **Crediting Policy** -- ¶ 693-697 - Both PG&E and Edison are under FERC directives to provide credits for "but for" Network Upgrades initially funded by new generators. The Commission continues to require such treatment for "non-independent" transmission providers. They afford RTOs and ISO's greater discretion. FERC cites to the policies in place in PJM where generators must pay for "but for" Network Upgrades, but also receive the FTRs (financial instrument) associated with those upgrades (PJM also has some kind of "Capacity Interconnection Rights."). The ISO must decide whether to continue crediting until we have LMP in place (MD02) and after. Of course, under the ISO's current zonal pricing system, there are no FTRs if a generator's upgrades are limited to "Intra-Zonal" facilities and thus the need to "offer" crediting as compensation for initially funding Network Upgrades.

Stakeholder Comments

**Calpine** favors awarding transmission credits to generators for network upgrades.

**Coral** believes the ISO must implement the five-year crediting policy mandated in the Final Rule.

**The Department of Water Resources – State Water Project (SWP)** warns that a 5-year crediting policy would make suppliers indifferent to the costs of upgrades. As an alternative to crediting, SWP urges the participant funding approach.

**Mirant** supports the five-year crediting policy or an alternative award of FTRs/CRRs as long as the funding entity makes the choice.

**SCE** supports the construction of Reliability Upgrades and cost-effective Deliverability Upgrades. The applicable PTO should either fund the upgrade itself and recover costs through the TAC, or require upfront funding by the generator and then provide credits (plus interest) to the generator.

For Delivery Upgrades that are not found to be cost-effective, SCE argues that the generator should be allowed to fund the upgrade and then receive FTRs/CRRs for its investment.

SCE opposes credits for generator funding of gen-tie or direct assignment facilities. SCE argues that crediting policy should be the same before and after MD02 is fully implemented.

**Sempra Energy Resources** supports the need to offer crediting as compensation for Network Upgrades until MD02 is in place due to the fact that FTRs are not available for Intra-Zonal congestion upgrades, as demonstrated in the Mexican Generation case study.

Preliminary ISO Response

The ISO proposes to continue the existing crediting policy whereby the Generator can receive transmission credits over a five-year period for its investment in network upgrades. This is the current FERC practice for two major California utilities, as well as nationwide, and in the current pre-MD02 environment, where the ISO is not able to offer FTRs with measurable value within transmission zones, the ISO agrees with many stakeholders this crediting policy is the best way for now to compensate developers for transmission grid improvements that benefit everyone. Regular assessments of plant retirements and new generation construction indicate that California might face low reserve levels or possibly resource shortages in the near future, and these and other assessments also persuade the ISO that the five-year payback to generators for upgrades is appropriate.

However, the ISO does propose to retain the option for assessing the costs and benefits of specific projects to ensure that upgrades are reasonably efficient and beneficial. In addition, the ISO will re-consider this crediting policy once LMP is implemented to ensure that new generators consider locational price signals and cost reimbursement for transmission upgrades is more integrated with the benefits of that market design.

- 2) **Regional State Committees (RSCs)** – ¶ 698 - FERC invites RSCs “to establish criteria that an independent entity would use to determine which Transmission System upgrades, including those required for generator interconnections, should be participant funded and which should not.” Even in the absence of a formal RSC, should the ISO establish criteria to determine which upgrades should be participant (generator) funded? The ISO will need to coordinate with the CPUC on this matter.

Stakeholder Comments

**Calpine** believes that FERC envisions RSCs to involve multiple states and that an RSC comprised of the CAISO by itself, or with the CPUC, does not meet the letter or spirit of FERC’s intent.

**The Department of Water Resources – State Water Project (SWP)** recommends the ISO work with the RSC to develop a standard of interconnection upgrades for all stakeholders to use.

**Mirant** urges the ISO to create explicit and detailed criteria for participant funding, and to re-evaluate these criteria if and when a RSC address the issue.

**SDG&E** recommends that, absent direction from a formal RSC, the ISO should only require an interconnecting generator to fund Network Upgrades when the ISO finds the cost of the Network Upgrade is not fully offset by benefits, i.e. the Network Upgrade fails the ISO’s cost-benefit analysis.

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**SCE** agrees the ISO should coordinate with the CPUC in developing these interconnection pricing and service policies.

ISO Preliminary Response

The ISO does not intend to establish criteria for participant funded upgrades. The ISO considers that a cost/benefit study on all individual projects may not be necessary. Rather, a defined cost threshold or screen could be utilized to define those projects where an economic study would be appropriate.

In the absence of clearer direction for what constitutes a Regional State Committee in the context of a one-state ISO, the ISO will continue to work closely with the CPUC and other state agencies.

- 3) **Network Service** – Should the ISO offer NR Interconnection service? Now or in the future?

The FERC rule provides that Transmission Providers offer two forms of interconnection service, NR Interconnection Service and ER Interconnection Service. ER Interconnection Service is an “as available” service that does not necessarily require transmission upgrades to ensure the deliverability of new generators. NR Interconnection Service however does contemplate that the new generator electing that service is available to serve system load for a specified set of system conditions and is thus deliverable. In order to satisfy such a requirement, NR Interconnection Service requires new generators to fund the transmission upgrades necessary to ensure their deliverability. The provision of NR Interconnection Service also contemplates that once designated as a Network Resource, a new generator will then count towards satisfying the capacity needs of the planning region (see paragraph 784).

Stakeholder Comments

**Mirant** does not have a definitive position on NR but looks forward to the dialogue.

Mirant sees no distinguishable difference between the current Deliverability Upgrades and the possible creation of some formal “Network Service.” Mirant suggests the most accurate terms in the California context would be:

- “Unrestricted Interconnection” – including resources that are currently attached or new resources that either pay for or don’t require deliverability upgrades, or
- “Restricted Interconnection” -- those projects that agree to operating constraints.

**PG&E** supports NR as the “default” interconnection service that integrates the new generator into the transmission system in a manner comparable to the service provided to native load customers.

**SCE** argues that without a fully developed resource adequacy requirement, it is premature for the CAISO to offer Network Interconnection Service.

**Sempra Energy Resources** supports NR service under Option 1 and prefers to modify the Amendment 39 terms “Deliverability” and “Reliability” Upgrades to conform to the NR service with the crediting mechanism.

#### Preliminary ISO Response

The ISO sees no real purpose for offering Network Service at this time because there is no currently effective state resource adequacy program and thus no formal requirement for meeting capacity needs, including a requirement for new generators to meet deliverability standards that would qualify as Network Service. The ISO intends to offer technical studies regarding deliverability which should provide useful information on the range of Network Upgrades that a generator may choose.

A generic interconnection service would offer flexibility in the current situation and allows each new Generator to tailor its needs and future plans for that interconnecting facility.

- 4) **Transmission Credits and CRRs** – Should the ISO continue to offer transmission credits to those that pay for Network Upgrades? Should the ISO continue to offer CRRs to customers that pay for upgrades? Should the ISO offer both and whose decision is it as to which option is elected?

#### Stakeholder Comments

**Calpine** favors the continued awarding of transmission credits to generators for network upgrades.

Calpine suggests that, since non-independent Transmission Owners perform the technical studies that determine Network Upgrade costs, California should adhere to FERC’s policy for transmission credit-backs.

**Coral** believes that until FTRs/CRRs are fully developed and implemented, the ISO has no choice but to offer transmission credits as contemplated in the Final Rule.

**The Department of Water Resources – State Water Project (SWP)** opposes offering FTRs or CRRs as credits for transmission upgrades. SWP believes these financial instruments are designed for load to hedge against uncertain costs, and not for generators to collect revenues.

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**FPL Energy** supports continued awarding of FTR/CRRS for Transmission-Only enhancements funded by third parties and not credited back to generators.

**Mirant** supports credits and believes FTRs/CRRs are acceptable alternatives as long as the generator can choose either option.

**SDG&E** believes generators who pay for Network Upgrades could choose to receive either CRRs or credit-backs for advancing the funding of Network Upgrades. SDG&E argues that Transmission Owners would retain the CRRs if the generator chooses the credit-back option.

**SCE** supports the construction of Reliability Upgrades and cost-effective Deliverability Upgrades. The applicable PTO should either fund the upgrade itself and recover costs through the TAC, or require upfront funding by the generator and then provide credits (plus interest) to the generator.

For Delivery Upgrades that are not found to be cost-effective, SCE argues that the generator should be allowed to fund the upgrade and then receive FTRs/CRRs for its investment.

**Sempra Energy Resources** supports the ISO offering both options (credits or CRRs) for return on the transmission upgrade investment.

Preliminary ISO Response

The ISO proposes to let new Generators choose the form of cost recovery for Network Upgrades: either transmission credits or applicable CRRs. On a long-term basis, this credit back policy may be reconsidered as property rights associated with new transmission investments are more clearly defined. In addition, in instances where a Generator has elected to receive transmission credits and an economic evaluation determines that the overall costs of the proposed Network Upgrade exceed the benefits, the ISO proposes that the Generator only receive credits up to the level of benefits and that the Generator receive, if applicable, the FTRs/CRRs for any costs incurred above the level of benefits.

The ISO clarifies that financial rights would continue to be allocated for merchant transmission projects as provided under section 3 of the ISO Tariff.

- 5) **Deliverability** - The current ISO Tariff and the Final Rule differ on the scope of required Network Upgrades. The Final Rule offers a Network Interconnection Service product that requires Network Upgrades for deliverability under a specified set of system conditions, and Energy Resource service that, consistent with the current ISO Tariff does not

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require the same magnitude of delivery upgrades for the same set of specified system conditions.

More specifically, the FERC rule provides two options to new generator owners to address the situation where there may be insufficient transmission capacity on the system to ensure delivery of their resource's output. First, the new generator could elect NR Interconnection Service and thus be required to pay for the transmission upgrades necessary to deliver the resource's output to load under a specified set of system conditions (under the FERC rule, the new resource owner would receive a credit so that the cost of the network upgrades are refunded to the generator owner within five years). Second, the new generator could elect ER Interconnection Service and thus not agree to upgrade the transmission system to the same level and face potentially more significant limitations on the output of its plant or unit. Should the ISO require that resources be "deliverable"?

### Stakeholder Comments

**Mirant** conceptually supports the possibility of "operating constraints" based on agreements reached in the interconnection process. However, there is some concern that interconnection approval could be unreasonably withheld to force agreement on "operating constraints." Mirant suggests some "default" terms that guarantee interconnection approval if certain minimum criteria is met.

Mirant also questions how agreed to "operating constraints" are recognized by the LMP-dispatch algorithms. Mirant offer the dispatch software probably should include restrictions on ER units, rather than dispatching purely in economic merit order.

**SCE** believes that resource adequacy issues, including the criteria for a deliverability standard, should continue to be addressed as part of the CPUC's long-term procurement process, with CAISO participation.

**Sempra Energy Resources** opposes requiring a resource to be deliverable.

### ISO Preliminary Response

The ISO believes deliverability should not be *required* at this time because there is no resource adequacy requirement that would provide a clear benefit or economic incentive for the generator to build the necessary upgrades to achieve deliverability. However, the ISO proposes to offer a benchmark deliverability study as part of the series of technical studies that assess the system impact of a new interconnection. This analysis would provide Generator developers a benchmark to understand the available transmission capacity during system peak conditions. In addition, a deliverability study should provide useful information to assess



the likelihood of the facility to deliver energy at varying levels of output during off-peak system conditions.

- 6) **Economic Methodology** – Does the ISO need to finalize and implement a cost-benefit methodology in order to move forward with defining an interconnection policy? Should the ISO apply such a methodology when evaluating Network Upgrades necessitated by interconnection requests?

Stakeholder Comments

**Calpine** encourages the CAISO to avoid creating new, expensive and time-consuming barriers to investment that are outside of the Final Rule.

**The Department of Water Resources – State Water Project (SWP)** supports a cost-benefit analysis for all network upgrades.

**FPL Energy** believes Transmission-Only interconnections should not be subject to CAISO cost/benefit test. FPL Energy seeks clarification that the ISO will continue to award FTR/CRR for these types of projects.

**Mirant** argues against cost/benefit analysis. Mirant believes that implementation of a cost-benefit methodology that is perceived to be fair by all parties will be very long, drawn out and contentious.

**PG&E** supports a cost-benefit methodology and urges the development of such a test as soon as possible.

**SDG&E** argues the ISO does not need to finalize a cost-benefit methodology in order to comply with Order 2003. SDG&E believes it is impractical to develop a single economic methodology for all upgrades.

**SCE** argues the CAISO should develop a method to determine the cost-effectiveness of Delivery Upgrades. SCE supports the basic elements of the CAISO/London Economics methodology, but flexibility in the economic analysis is essential for particular transmission projects.

**Sempra Energy Resources** supports development of guidelines for workable methodologies to analyze the cost-benefits of a potential network upgrade. Sempra supports current tariff language that allows flexibility for any party to sponsor/present a cost-benefit analysis.

Preliminary ISO Response

The ISO favors the development and application of a cost-benefit test to be applied to projects requiring significant network upgrades. The purpose of an ISO applied cost-benefit test would be to determine whether transmission customers would receive benefits commensurate with the costs they would be crediting back to the generator and, ultimately, paying through rates. The ISO emphasizes this economic analysis should

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be limited to large cost upgrades and should not unreasonably delay or obstruct worthy projects. The ISO welcomes stakeholder input on the methodology and process for such a cost-benefit test.

- 7) **Cost-Responsibility Allocation** - To the extent that multiple Transmission Owners would need to participate in installing system Network Upgrades, would a cost/benefit analysis include a cost reallocation mechanism among the participants such that all entities receive a net benefit?

Stakeholder Comments

**Calpine** encourages the CAISO to avoid creating new, expensive and time-consuming barriers to investment that are outside of the Final Rule.

**SCE** argues that all Network Upgrades should be recovered through the CAISO's TAC methodology, and there is no need for a cost-benefit analysis to reallocate transmission costs among PTOs.

**Sempra Energy Resources** supports the general idea that those who pay for the upgrade will receive the benefits. Cost reallocation to multiple owners should apply if net benefits are demonstrated.

Preliminary ISO Response

Consistent with cost-causation, the ISO believes the costs incurred for the upgrades on each Transmission Owners system should be the basis on which to determine the proportional benefits after the overall project passes the cost/benefit test.

- 8) **Phase-In Approach** – Should the ISO adopt a phase-in approach wherein one policy is in place for the interim period until MD02 is further implemented and the state establishes a resource adequacy policy. The interim interconnection policy and rules would then be updated to reflect whatever changes are required pursuant to the market design and state policy.

Specifically, in the near term, prior to implementation of either MD02 or a resource adequacy program in California, a number of issues need to be addressed. Because LMP will not have been implemented, Intra-Zonal Congestion will continue to be managed in real-time and entities will continue to be able to submit infeasible day-ahead schedules. [We note, however, the financial impact of managing the Intra-Zonal Congestion will in part be mitigated by the recent FERC ruling regarding Amendment No. 50, i.e., application of "dec"-bid reference prices]. Since Intra-Zonal Congestion will continue to be managed in real-time, it appears that the best means to mitigate the Intra-Zonal Congestion resulting from the

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interconnection of new generators is through expansion of the transmission system. That is, since there will be no effective way to manage Intra-Zonal Congestion in the forward markets prior to the implementation of LMP, the next best solution may be upfront expansion of the transmission system. In this instance then, expansion of the grid to accommodate new generation could serve a dual purpose, mitigate resulting Intra-Zonal Congestion and increase the likelihood that the full output of the new resources can be delivered.

Stakeholder Comments

**Calpine** prefers consistency in market rules over frequent disruptions. Even some initial delay in Final Rule implementation is preferable to interim modifications that hinge on the MD02 process.

**Mirant** sees no need for a phased-in approach. Mirant believes the "operating constraint" approach should solve the Intra-Zonal Congestion issue for new interconnections.

**SDG&E** suggests a phased in approach need not be an explicit part of the compliance filings. Future tariff changes can be made to reflect MD02 and/or a resource adequacy policy implementation.

**SCE** argues that pricing policy should be the same before and after MD02 is fully implemented. SCE urges the CAISO to move forward with revising its pricing policy to ensure that cost-effective Delivery Upgrades are constructed.

**Sempra Energy Resources** believes that Option 1 appears to encompass the phased-in approach for incorporating MD02 elements and resource adequacy components.

Preliminary ISO Response

This ISO is sympathetic to the view that establishing one consistent interconnection policy for the long-term is preferable, but the linkages among resource adequacy, the development of property rights within an LMP environment, and new generator interconnections suggest that possible changes to interconnection policy will likely need to be considered in the future.

However, at this time the ISO does not intend to declare specifically an "interim" period for implementation of this Final Rule. The ISO expects its Compliance Filing to be suited for the current situation, and that future events may require additional stakeholder participation and re-examination of the ISO's interconnection processes and policy.

- 9) **Allocation of CRRs** – What is the relationship between the CRR allocation process contemplated under MD02 and the proposal to allocate

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CRRs to interconnection customers that fund Network Upgrades? What types of facilities qualify for CRR allocation (e.g., Reliability Upgrades, Delivery Upgrades, both, FAQs, capacitor installations, etc?).

Stakeholder Comments

**The Department of Water Resources – State Water Project (SWP)** opposes the allocation of CRRs to generators. To the extent a crediting policy is in place, SWP believes credits should be in the form of transmission credits only, and that CRRs should be allocated to load only.

**FPL Energy** supports continued awarding of FTR/CRRS for Transmission-Only interconnections. FPLE believes the allocation of CRRs for transmission enhancements that are funded by third parties and not credited back to generators should not be subject to CAISO cost/benefit test.

**Mirant** offers support for the basic concept: funders of upgrades that increase capacity should be eligible for CRRs corresponding to that increase.

**SDG&E** believes that CRR allocation should only apply to existing transmission. CRRs associated with new transmission should be awarded to those that fund the upgrade. Any type of facility that results in a change in transfer capability should be awarded the associated new CRRs.

**SCE** argues that CRRs associated with Reliability Upgrades and cost-effective Delivery Upgrades should be allocated to LSEs based on the LSE load and resource delivery requirements (as contemplated in MD02).

SCE suggests that CRRs associated with Delivery Upgrades that are not found to be cost-effective should be allocated to the entity that pays for the Delivery Upgrade.

**Sempra Energy Resources** favors allocation of the corresponding CRRs for any equipment used to upgrade the transmission transfer capability.

Preliminary ISO Response

The ISO initially proposes to allow the generator the choice of transmission credits or CRRs to compensate for investments in network upgrades that increase transmission capacity (delivery upgrades). The ISO will continue to consider how this policy would relate to CRR allocation process under MD02.

10) **Other Issues...**

Stakeholder Comments

**Calpine** inquires about issues not addressed in this White Paper – specifically, queue positions; scope, timing, costs and clustering of

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technical studies; dynamic scheduling; construction of facilities or upgrades; confidentiality; dispute resolution. Calpine asks whether the ISO will file *pro forma* language or modified language related to these issues.

Calpine requests red-lined documents showing where the proposed ISO compliance language does not conform with the Final Rule's *pro forma* interconnection policy and agreements.

Coral supports provisions in the crediting policy for network upgrades to allow tax-related payments, assignable rights of credits, interest at the FERC rate and credits for service taken anywhere on the transmission system.

**Mirant** suggests minimum "default" conditions whereby interconnection approval is guaranteed, so that agreement on potential "operating constraints" is the result of mutual agreement, not coercion.

Mirant raises the issue of compensation to generators for VARs, and suggests the new Interconnection Agreements should change the approach of the current PGAs with regard to Reactive Power.

**SDG&E** recommends the ISO and PTO compliance filings conform their terminology to that used in Order 2003 to the extent possible.

### Preliminary ISO Response

Many of the additional issues raised by stakeholders will be addressed in the specific tariff language the ISO will provide in its compliance filing. As stated in assumption number one above, the ISO intends to start with the *pro forma* interconnection agreement and interconnection procedures adopted by FERC in the final rule. Therefore, issues such as queuing, study scope and timing, and tax-related payments will be consistent with the final rule.

The ISO greatly appreciates the time and effort stakeholders have devoted thus far in this process. All of these written comments as well as informal comments expressed at the October 21<sup>st</sup> stakeholder meeting have been very helpful. The ISO hopes and encourages continued participation in the next stakeholder meeting scheduled for November 12<sup>th</sup>, as well the second and third round of written comments.

## VII. Case Studies

In order to lay a better foundation for discussing and vetting the policy issues raised by, and the implications of, Order 2003, we discuss below a case study in the interconnection process. The case study is based on a historical example that highlights some of the issues with which we will have to grapple and resolve,

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especially in the near-term. The case study is for illustrative purposes only and is intended to stimulate discussion and shape each party's response to this paper.

### **Case Study - The Mexican Generation Situation**

#### *Background*

In 2001, a number of developers requested interconnection of new generation facilities in Northern Mexico, near the California border. In total, approximately 1660 MWs of new generation was proposed to be interconnected in the area of the Imperial Valley 230 kV bus (including AES and AEP there was actually 2000-3000 MW in the queues). While located in Mexico, a significant reason for developing the new generation was to sell into the California market (most of the LRPP was committed to CFE under long-term sale). In fact, while located in Mexico, electrically, the plants were designed and built in a fashion to, in part, directly interconnect to the ISO system and thus become part of the ISO Control Area. The plants include InterGen's La Rosita plant interconnected into the Mexican system (four units, 750 MW combined, however only one 170 MW unit capable of being interconnected to the Imperial Valley substation via transfer switches at the plant; the La Rosita Expansion Project (two units, 310 MW combined) facilities and Sempra's Termoelectrica De Mexicali or "TDM" facility (three units, 600 MW combined). A portion of the La Rosita Plant that is interconnected to CFE can be scheduled through the Inter-Zonal path between CFE and the ISO.

Concurrent with these plants interconnection requests to the ISO grid, there was significant generation addition activities in Arizona (Palo Verde Area). The generation addition in Arizona was proceeding independent of the ISO-established or governed interconnection policy or procedure. Over 6,000 MW of generation has been added in the Palo Verde area, the southern terminus of the Palo Verde to Devers and the Palo Verde to Miguel 500 kV lines. This has resulted in increased power flow on the Arizona to California, East of the Colorado Rive (EOR) path resulting in Inter-Zonal congestion. This Inter-Zonal congestion is contributing to the congestion at Miguel.

Consistent with the ISO interconnection policy and procedures that existed at the time, the generators' interconnection request was studied by San Diego Gas & Electric Company in close coordination with the ISO through a work group effort which consisted of Plant owners and other impacted entities. Interconnection study results indicated that the system could accommodate the interconnection of the full capacity of the new generators, but that delivery would be limited to an as available basis subject to the existing ISO congestion management procedures.

#### *Consequences of Interconnection of the Mexican Generation and Generation additions in Arizona*

There were two direct consequences to that determination:

- 1) **Increased Inter / Intra-Zonal Congestion** – As a result of the interconnection and subsequent operation of the new generation addition

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in Mexico and Arizona, there has been a significant increase in congestion at the Miguel Substation. Thus, because the new generation results in an increase in a "Hybrid" (Inter and Intra-Zonal) Congestion the congestion cannot be managed through the ISO's bid-based day-ahead congestion management process but instead has to be managed by mitigating the Congestion in real time, pursuant to the ISO's existing Intra-Zonal congestion management process. This is a well-known consequence and deficiency of the ISO's existing congestion management process. The existing design effectively permits entities to submit "infeasible" day-ahead schedules that cause congestion; congestion that can only be managed in real time and the cost to relieve is imposed on all loads in the affected zone. Such an outcome is problematic for three reasons. First, the increase in real-time Inter/Intra-Zonal Congestion causes operational/reliability problems because the ISO's operators have to dispatch resources in real time to relieve the congestion. Second, because the entity that causes the congestion is not held financially responsible for it and thus the costs of relieving the congestion is spread to others. Third, because the generators have to be curtailed to mitigate congestion, they are in a position to exercise local market power by submitting a low decremental bid to relieve congestion (i.e., exercise the "DEC" game).

- 2) **The Energy is Undeliverable to Load** – A further consequence of the method by which the new Mexican generation was interconnected to the grid is that the energy from the plant may not be delivered depending on the new Mexican generations' dec' bids as compared to other suppliers' competing dec bids, and the relative effectiveness of those bids in mitigating the intra-zonal congestion. That is, because the network transmission facilities in the area around the plant are of insufficient capacity to carry both the output of the plants as well as other flows on the lines, the lines are frequently congested and the system does not have the full benefit of the plants' capacity. In many circumstances, the output of the plant has to be reduced to address Intra-Zonal Congestion and is thus unavailable for dispatch and to serve load. Clearly, all can agree that going forward, this situation is best avoided. In the future, upon the implementation of the ISO's proposed Market Design 2002 ("MD02") and Locational Marginal Pricing ("LMP"), all congestion will be managed in the day-ahead market where all entities' Final Schedules will be physically feasible and each entity will pay for their use of the grid including all associated congestion. Therefore, implementation of MD02 and adoption of a resource adequacy program by the State should eliminate a number of the adverse consequences identified above.

However, prior to the implementation of MD02 and a resource adequacy requirement in California, near-term solutions must be identified to address the issues discussed above.

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*Feedback Requested: The ISO requests feedback on what near-term options are available to address the issues identified above and, specifically, whether a deliverability requirement for new generators is appropriate and required both for the interim period as well as on a long-term basis, and if so, how "deliverability" should be defined.*

### Stakeholder Comments

**Coral** objects to the title of this case study and suggests that generation from the Palo Verde area is as much responsible for the Miguel substation congestion as the Mexicali generators.

Coral argues that a fundamental problem with a deliverability requirement is that necessary transmission upgrades typically have longer permitting processes and construction timelines than power plants. Coral suggests that power plant developers cannot complete the transmission upgrades necessary to deliver the plant's output in the same timeframe as completion of the power plant, and therefore new generation would be discouraged inappropriately.

**SDG&E** does not believe an ISO-enforced "deliverability requirement" is either appropriate or practical. SDG&E prefers to let the contract counter-parties work out "Deliverability" issues on terms that make commercial sense for each party.

SDG&E believes the only rational, fair and efficient way to decide who gets to use the grid when all desired uses of the grid can't be simultaneously accommodated is through bids in the ISO's day-ahead, hour-ahead and/or real-time markets.

### Preliminary ISO Response

As acknowledged in the above case study, the ISO agrees with Coral that imports from Palo Verde also contributed to the resulting congestion at Miguel. In the ISO's view, this fact further highlights the problems with current distinction between Inter and Intra-Zonal Congestion.

The ISO shares Coral's concerns regarding the mismatch between generation and transmission infrastructure development lead times. On the one hand, the long lead times associated with getting new transmission sited and built argues for a proactive transmission planning policy that *anticipates* the needs of both generation developers as well as the larger system needs (i.e., capacity for the region). However, such a policy could also result in stranded transmission investment if the market (and related generation development) signals no new generation is needed and the planned generation fails to materialize. Alternatively, and of equal concern, would be to let actual generation development drive transmission expansion. Under this scenario, it is likely that transmission infrastructure development may not keep pace with new generation, thus resulting in constrained-out generation pockets. Such an outcome would reduce prices in the constrained area and may result in generation exiting the market or not developing. A prudent approach may be to develop and apply interconnection-transmission planning processes that rely on both market signals and a more centralized but proactive transmission planning process that



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anticipates generation development to ensure that there is sufficient transmission to support new generation. A key component of such a process would be a robust economic evaluation methodology.

## Appendix A

### Preliminary ISO Positions on FERC Large Generator Interconnection Rule

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*Purpose: The purpose of this document is to provide Market Participants with the ISO's position on a number of the issues raised by the FERC's Order 2003. The statements in this paper do not represent the formal position of the ISO and the ISO's position on each of the identified issues is therefore likely to evolve.*

#### **Interconnection Service**

- Define and establish a *generic* interconnection service under which Market Participants could elect varying levels or quality of service, depending on the level and amount of transmission upgrades they are willing to sponsor

At this juncture, the ISO recommends that the ISO and Participating Transmission Owners (PTOs) develop and offer one form of interconnection service. That is, the ISO would develop a "generic" form of interconnection service that would allow each new Generator to specify the *level* or *quality* of interconnection service it desires, based in part on the level of transmission upgrades it is willing to *sponsor* as part of its interconnection request. Thus, the ISO would not define and offer "Network Resource Interconnection Service" as explicitly defined and proposed by FERC. The ISO may later define and establish such a service once the state has defined its rules for capacity resources and associated requirements.

The significance of this position is that the ISO will offer to Market Participants the *flexibility* inherent in the two-service approach proffered by FERC. Moreover, it will allow the ISO to defer having to represent the comprehensive benefits of – and develop and implement all of the associated policy changes and ISO Tariff amendments that would be necessary to facilitate - "Network Resource Interconnection Service," as that service and construct is defined under the FERC rule (i.e., resources that are fully integrated into the system). Any such characterization at this time would be premature until the California Public Utilities Commission ("CPUC") and, more generally, the state, establish a state resource adequacy requirement or framework. Such a framework would hopefully clarify the type and nature of the resources necessary to satisfy the state's procurement rules and, related to that, whether those resources are "deliverable" (i.e., whether, under a specific set of conditions, the energy – at full output - from a resource can be delivered to load).

Alternatively, should the ISO proceed to offer "network" service, the ISO would, by necessity, be required to more broadly explain or define what it means to be a Network Resource, which, as discussed above, would be premature and problematic without knowing the salient features of an underlying resource adequacy program.

**Deliverability**

- Define, for purposes of studying interconnection requests, a generic *deliverability* standard

Notwithstanding the ISO's preliminary position outlined above regarding not providing Network Resource Interconnection Service, the ISO does recommend that a "deliverability" standard be defined. That is, the ISO would proceed to define the set of study parameters (e.g., system conditions, resource assumptions, etc.) necessary to assess whether a resource – at full output – can deliver its output to load (either on a system-aggregated basis or on a more localized basis). However, the ISO would not *require*, as FERC does in defining the requirements of its proposed Network Resource Interconnection Service, that deliverability be an inherent element of its "generic" interconnection service, i.e., that Generators fund the upgrades necessary to integrate their resource in a manner comparable to other *network* resources.

At this juncture, the ISO recommends that the "deliverability" standard inherent in FERC's rule be the starting point for establishing the quality of the "generic" interconnection service that the ISO would offer. Specifically, for Network Resource Interconnection Service, the FERC rule outlines a System Impact Study process wherein the ISO would

*"...study the Transmission System at peak load, under a variety of severely stressed conditions, to determine whether, with the facility at full output, the aggregate of generation in the local area can be delivered to the aggregate of load, thus allowing the Generating Facility to qualify as a Network Resource".*

By defining deliverability, the ISO can then offer Market Participants a *benchmark* from which to assess their "deliverability risk" when scheduling a unit's output to the aggregate of load. While the ISO would not *require* that resources be deliverable, the ISO would enable Market Participants to assess and elect a level of interconnection service that will provide them greater assurances that they could satisfy future established requirements for "network" resources, i.e., resources that satisfy the state's requirements for *capacity* resources. Obviously, any definition of deliverability ultimately adopted and employed by the ISO may have to be revisited (redefined) once the state establishes specific requirements for capacity resources.

**Payment for Interconnection Facilities and Network Upgrades**

- If necessary, Generators will be required to fund Network Upgrades necessary as a result of their interconnection but in return receive either a *credit* – as defined by FERC – or, if applicable, financial *property rights* in the form of FTRs/CRRs.

A key issue for resolution with respect to the interconnection process is the cost-responsibility for Network Upgrades, be they reliability or deliverability related. (With respect to Interconnection Facilities/Direct Assignment Facilities, there is no disagreement that the Generator is responsible for the cost of these facilities,

without being entitled to receive financial credit or FTRs/CRRs in return for such costs; the Generator would have to rely on its market revenues for recovery of such costs.)

A prerequisite for determining cost-responsibility is, of course, determining who benefits from new transmission facilities. In FERC's view, the benefits from the addition of any Network Upgrade accrue to all users of the system and thus, fundamentally, all load served off of the system. Therefore, in the absence of clearly defined property rights, while FERC allows or provides that Generators can be required to initially *fund* a Network Upgrade, the Transmission Owner/Provider must refund all costs (including interest) within five years. In the end, therefore, ratepayers (load) pay for the Network Upgrade costs as the Transmission Owners include the costs of the facilities in their transmission rate base and revenue requirement. However, in instances where there are clearly defined property rights (most likely financial), FERC has allowed or permitted Transmission Owners to require new Generators to pay for Network Upgrades. The ISO understands that this is the policy in place currently in PJM.

At present, the ISO can only offer clearly definable property rights – Firm Transmission Rights – over its established Inter-Zonal Interfaces. Thus, under most circumstances where a new Generator is interconnecting to the system, the ISO is unable to provide FTRs (i.e., because the impacted transmission facilities are intra-Zonal facilities). Thus, under both FERC's existing as well as proposed policy, it appears that under most circumstances the ISO/PTOs will be required to provide a *credit* to Generators that fund Network Upgrades.

Based on this assessment of the circumstances, the ISO is prepared to support a policy wherein Generators fund, if the Transmission Owner chooses not to, all Network Upgrades necessary as a result of their interconnection, but receive either *credits*, or, if applicable and elected by the Generator, existing property rights (at present, FTRs, and in the future, Congestion Revenue Rights or "CRRs").

On a long-term basis, once there are clearly defined property rights associated with new transmission investments, the ISO envisions *only* offering property rights as compensation for funding the transmission upgrades associated with new Generator interconnection requests. One exception to this concept would be in circumstances where there are no assignable property rights (e.g., circuit breakers and other primarily reliability-driven upgrades where there is not an increase in transmission transfer capability).

#### **Economic (Cost/Benefit) Analysis**

- The ISO supports development and application of general guidelines for performing an economic evaluation of transmission upgrades associated with new Generator interconnection requests.

The ISO supports development and application of a cost-benefit test or evaluation for purposes of determining the beneficiaries of, and cost-

responsibilities for, the Network Upgrades associated with new interconnection requests.

The ISO's rationale for supporting such an analysis is to, in part, mitigate concerns about "uneconomic expansion" of the transmission system. As the ISO has repeatedly stated throughout FERC's rulemaking process, the ISO is concerned that FERC's proposed crediting policy may undermine or moot the locational price signals the ISO is otherwise attempting to establish with respect to use of the transmission system (e.g., locational marginal prices). Specifically, the ISO is concerned that new generators may be indifferent to the impact on the grid from their interconnection if they receive a complete refund of the monies necessary to fund the required upgrades and, in the end, ratepayers pay for the upgrades. On a long-term basis, this issue should be addressed once there are clearly-defined property rights associated with new transmission investments and thus individual investors (new generators in this case) will face the consequences of their investment decisions. However, in the interim, prior to the development of such property rights and in acknowledgement of FERC's established crediting policy, the ISO supports conducting an "economic" analysis of the transmission upgrades necessitated by new interconnection requests. As a general matter, the ISO supports the approach outlined in the ISO's October 1, 2003, White Paper, referred to as the "*Optional Uneconomic Network Upgrade Test*." As described in the White Paper, the objective of performing such an analysis would be to determine the extent of the benefits resulting from an upgrade and using that as a *de facto* cap on the level of credits offered to the Generator. In instances where the costs of the upgrade exceed this cap, the Generator would receive, if applicable, the associated property rights.

The ISO does not support development and application of a specific "economic methodology" at this time. Instead, the ISO proposes to establish general guidelines for such an analysis and specifically reserve the flexibility to study appropriately each proposed transmission upgrade or project.

#### **Reliability and Deliverability Upgrades**

At this juncture, the ISO recommends retaining the distinction between reliability-driven and deliverability-driven Network Upgrades. The ISO recommends retaining such a distinction because Reliability Upgrades define the minimum upgrades necessary to interconnect any new Generator's unit to the transmission system. That is, regardless of the *level* of interconnection service elected above, each new Generator would be obligated to initially fund, if the applicable PTO does not, all reliability-related Network Upgrades associated with the new Generator's request. While the ISO does not offer here a detailed description of what types of upgrades/facilities constitute Reliability Upgrades, at a minimum such facilities would include all facilities identified as necessary, under a typical short-circuit analysis, to interconnect the new Generator's unit at zero output under stressed system conditions (either on-peak or off-peak, as appropriate).

On the other hand, Deliverability Upgrades represent those Network Upgrades necessary to satisfy, in whole or in part, the ISO's proposed *baseline*

deliverability test, as discussed above. These upgrades would be the transmission upgrades necessary to deliver the full output of the new Generator's unit under peak-load conditions and under stressed system conditions to the aggregate of load. (However, it is important to reiterate that even though a Generator funds and the applicable PTO constructs such deliverability-related Network Upgrades, the Generator will still be subject to the ISO's bid-based Congestion Management protocols and, on any given day/hour, may be unable to deliver the full output of its plant or unit.).

However, for purposes of further aligning these definitions with those proposed by FERC under Order 2003, the ISO would propose to establish revised definitions for Reliability *Network* Upgrades and Deliverability *Network* Upgrades.

**Summary of  
Final Round of Stakeholder Comments on Order 2003**  
(Received November 20<sup>th</sup>)

General Issues

- SCE – Concerned that ISO balance between pricing and service may delay construction of some upgrades
- PG&E – ISO should proceed with its proposal even with Resource Adequacy program not yet completed
- SDG&E – ISO should proceed expeditiously to meet the filing deadline
- Calpine – Cautions against deviations from the pro forma language in Order 2003
- Oversight Board – ISO needs to coordinate with the CPUC Procurement proceeding
- SEMPRA – Concerned that ISO resists industry move towards standardization; ISO should consider requesting a time extension to make its filing due to the Resource Adequacy proceeding

Interconnection Service

- SCE – Agrees it is premature to offer Network Interconnection Service, but urges ISO to require that Delivery Upgrades that are necessary and cost effective be constructed by PTO
- PG&E – Supports ISO proposal
- SDG&E – ISO should offer only Energy Resource interconnection service
- Calpine – Generally supports ISO recommendation
- Oversight Board – Supports ISO proposal
- CDWR – Supports ISO proposal
- SEMPRA – Does not support ISO proposal

Retaining distinction between Reliability and Deliverability Network Upgrades

- SCE, PG&E, SDG&E, and Oversight Board – Support ISO proposal
- Calpine – Generally supports the concept
- CDWR – Proposed distinction should be expanded

Payment/Pricing Policy for Interconnection Facilities and Network Upgrades

- SCE, PG&E, SDG&E, Calpine, Oversight Board – Support ISO proposal
- CDWR – Property rights awarded should expire at a certain point
- SEMPRA – Supports FERC Order 2003 rules

Deliverability Test

- SCE – Agrees that ISO should work with stakeholders and CPUC on deliverability standard
- PG&E – Supports development of a deliverability standard
- SDG&E – Premature to establish a "generic deliverability standard"
- Calpine – Generally supports the concept
- Oversight Board – Agrees there should be a deliverability standard
- CDWR – Agrees
- SEMPRA – Supports the concept; deliverability should be optional

**Summary of  
Final Round of Stakeholder Comments on Order 2003**

Economic (Cost/Benefit) Test

- SCE – Agrees with ISO preliminary recommendation
- PG&E – Supports ISO economic test
- SDG&E – Supports the development of general guidelines
- Calpine – Generally supports ISO proposal; suggests threshold of \$20 million or \$80/kW.
- Oversight Board, CDWR, SEMPRA – Supports

Interconnection Application and System Study Process

- Calpine – Generally supports; concerned about losing position in queue if developer agrees to modify its proposal after ISO and PTO technical review
- SEMPRA – ISO should adopt Order 2003 and proceed with minimal deviation

Other Elements/Issues

- PG&E – LGIA should designate representatives for operating communications
- Calpine – Compliance Filing should conform to pro forma procedures and agreements as much as possible
- CDWR – ISO should adopt FERC definition of Interconnection Facilities

**The Following are Comments as submitted by Stakeholders**



## Southern California Edison Company

Date Comments Submitted: November 20, 2003  
Name of Person: David Schiada  
Name of Organization: Southern California Edison

*The issues and recommendations outlined below are those identified in the ISO's "Preliminary ISO Positions on Large Generator Interconnection Rule", as issued October 28, 2003, as well as other documents posted to the following site*

<http://www.caiso.com/docs/2003/10/01/200310011700457483.html>.

### General Issues

(e.g., interrelationship between Interconnection process and CPUC Procurement proceeding; comments on ISO Governing Board-FERC compliance process)

#### Comments:

SCE appreciates the opportunity to submit comments on the CAISO's "Preliminary ISO Positions on FERC Large Generator Interconnection Rule" paper dated October 28, 2003. In general, it appears that in its preliminary positions on FERC's Large Generator Interconnection Rule, the CAISO has attempted to strike a balance between the pricing and service policies in FERC's Final Rule and the uncertainty associated with how those policies will interface with the state's development of a resource adequacy proposal. In attempting to strike this balance, however, SCE believes that the CAISO's preliminary positions will, in essence, continue the status quo and not ensure that necessary and cost effective Delivery Upgrades will get constructed. In addition, we are concerned that the CAISO's recommendation to offer varying levels of interconnection service, at the interconnecting customer's discretion, could unnecessarily delay the processing of interconnection requests if the interconnection study procedures do not require the interconnecting customer to commit to a level of service at the appropriate time in the interconnection process. SCE provides additional comments and recommendations below to address these concerns.

### Interconnection Service

*The ISO proposes to "Define and establish a generic interconnection service under which Market Participants could elect varying levels or quality of service, depending on the level and amount of transmission upgrades they are willing to sponsor"*

#### Comments:

It appears that the CAISO's preliminary recommendation to establish a generic interconnection service under which an interconnection customers could elect varying levels or quality of service depending on the amount of transmission upgrades they are willing to sponsor is very similar (if not the same) to the existing interconnection service under the CAISO's current tariff. Under the current tariff, an interconnection customer is required to pay for Reliability Upgrades and can elect to pay for Deliverability Upgrades at its discretion. It appears that under the CAISO's preliminary recommendation, the same policy would apply.

While SCE agrees with the CAISO it is premature for the CAISO to offer Network Interconnection Service until a resource adequacy requirement is established, SCE is concerned that the CAISO's preliminary recommendation

will continue the status quo that is not resulting in needed transmission expansion to provide deliverability for new generation. SCE urges the CAISO to modify its preliminary recommendation to ensure that Delivery Upgrades that are "necessary and cost-effective" are identified in the interconnection studies. Delivery Upgrades that are found to be necessary and cost-effective by the CAISO should be constructed by the applicable PTO and the costs should be recovered through the TAC. The applicable PTO should be able to either fund the upgrade itself or require upfront funding by the generator and then provide credits (plus interest) to the generator.

#### Retaining distinction between Reliability and Deliverability Network Upgrades

Comments:

SCE supports the CAISO's preliminary recommendation to retain the distinction between reliability and deliverability driven upgrades.

#### Payment/Pricing Policy for Interconnection Facilities and Network Upgrades

The ISO proposes to *"If necessary, Generators will be required to fund Network Upgrades necessary as a result of their interconnection but in return receive either a credit – as defined by FERC – or, if applicable, financial property rights in the form of FTRs/CRRs."*

Comments:

The CAISO preliminary recommendation states that, if necessary, Generators will be required to fund Network Upgrades necessary as a result of their interconnection but in return receive either a credit – as defined by FERC – or, if applicable, financial property rights in the form of FTRs/CRRs. SCE generally supports the CAISO's recommendation, subject to the following qualifications. First, as described in the comments on service and pricing, the necessary Network Upgrades associated with interconnection should not only include Reliability Upgrades but should also include Delivery Upgrades that are "necessary and cost-effective". Second, SCE's support is contingent upon the CAISO continuing to support its position that Generators should fund, if the Transmission Owner chooses not to, all Network Upgrades necessary as a result of their interconnection. Third, generators should receive FTRs/CRRs in the case where Delivery Upgrades are not found to be cost-effective by the CAISO (generators that fund Reliability Upgrades or Delivery Upgrades that are found to be necessary and cost-effective should receive credits if they fund such upgrades). Finally, SCE does not believe the CAISO's policy on payment for interconnection facilities and network upgrades should change post MD02.

#### Deliverability Test

The ISO proposes to *"Define, for purposes of studying interconnection requests, a generic deliverability standard"*

Comments:

In this section, the CAISO proposes to define, for purposes of studying interconnection requests, a generic deliverability standard. Although the interconnection studies would identify transmission network upgrades necessary for a generator to meet this deliverability standard, the generator would not be required to pay for such upgrades (although the generator could elect to pay for such upgrades). SCE agrees that the CAISO should be working with stakeholders and the CPUC to ensure that a deliverability standard is developed as it is a necessary component of a resource adequacy requirement. However, it is unclear how generators or load-serving entities would benefit from the CAISO including a deliverability standard in its Order 2003 compliance filing with FERC given that the CPUC is addressing resource adequacy issues in its own proceeding. If the CAISO identifies network upgrades required to meet the CAISO's deliverability standard, and a generator elects to fund those

upgrades (subject to receiving credits back over five years), will the generator be able to qualify as a capacity resource under the CPUC's resource adequacy proposal? It doesn't seem like the answer to that question is known at this time. Therefore, without a fully developed resource adequacy requirement, SCE believes that resource adequacy issues, including the criteria for qualifying as a "capacity" resource and a deliverability standard, should continue to be addressed as part of the CPUC's long-term procurement proceeding with CAISO participation.

#### Economic (Cost/Benefit) Test

*The ISO supports development and application of general guidelines for performing an economic evaluation of transmission upgrades associated with new Generator interconnection requests.*

#### Comments:

In its preliminary recommendation, the CAISO supports development and application of general guidelines for performing an economic evaluation of transmission upgrades associated with new Generator interconnection requests. SCE agrees with the CAISO's preliminary recommendation. However, SCE urges the CAISO to work with stakeholders to develop more details on these general guidelines so they can be utilized after the January 20, 2004 compliance filing. Also, SCE again urges the CAISO to revise its preliminary recommendation on service and pricing to ensure that Delivery Upgrades that are found by the CAISO to be necessary and cost-effective based on application of the general economic guidelines are actually constructed.

#### Interconnection Application and System Study Process

#### Comments:

No comments at this time.

#### Other Elements/Issues

#### Comments:

No additional comments.

## Pacific Gas and Electric Company

Date Comments Submitted: 11-20-2003  
Name of Person: Jason Yan  
Name of Organization: Pacific Gas and Electric Company

*The issues and recommendations outlined below are those identified in the ISO's "Preliminary ISO Positions on Large Generator Interconnection Rule", as issued October 28, 2003, as well as other documents posted to the following site*

<http://www.caiso.com/docs/2003/10/01/200310011700457483.html>

### General Issues

(e.g., interrelationship between Interconnection process and CPUC Procurement proceeding; comments on ISO Governing Board-FERC compliance process)

#### Comments:

*CPUC Procurement Proceeding.* The November 18, 2003 draft decision of ALJ Walwyn on PG&E's Edison's and SDG&E's short and long-term procurement plans leaves many of the important details of a resource adequacy proposal (including criteria for qualifying as a "capacity" resource and development of a deliverability standard) to future workshops and proceedings. Thus, it is not yet possible to determine what a resource adequacy program will look like for California or what impacts such a program will have on large generator interconnection policies or practices. PG&E believes the ISO should proceed to develop the proposals outlined in the ISO's October 28, 2003 Appendix A to the ISO White Paper and the ISO and IOUs should continue their active involvement in the CPUC's procurement proceedings to ensure that issues regarding resource adequacy and deliverability are adequately addressed.

### Interconnection Service

The ISO proposes to *"Define and establish a generic interconnection service under which Market Participants could elect varying levels or quality of service, depending on the level and amount of transmission upgrades they are willing to sponsor"*

#### Comments:

PG&E supports the ISO proposal to offer one generic interconnection service in which Market Participants could elect varying levels of service. PG&E strongly supports the ISO's proposal to impose, in certain limited circumstances, operating constraints on Market Participants that elect not to sponsor upgrades that are considered to be deliverability network upgrades. Further, PG&E believes that any operating constraints will need to be included in the LGIA (between the Interconnection Customer, PTO and ISO) and the PGA (between the Interconnection Customer and the ISO).

### Retaining distinction between Reliability and Deliverability Network Upgrades

#### Comments:

While PG&E supports retaining the distinction between the two types of upgrades, PG&E realizes that their definitions may need some fine-tuning. Specifically, the definition of a Deliverability Network Upgrade must refer to

the deliverability standard, which is currently being developed by multiple California parties. PG&E will discuss the deliverability standard in further detail below.

#### Payment/Pricing Policy for Interconnection Facilities and Network Upgrades

*The ISO proposes to "If necessary, Generators will be required to fund Network Upgrades necessary as a result of their interconnection but in return receive either a credit – as defined by FERC – or, if applicable, financial property rights in the form of FTRs/CRRs."*

##### Comments:

Currently, PG&E supports providing credits/payments over a five-year period, as defined by FERC, subject to the ISO's proposed cost/benefit test for expensive upgrades and the ISO's proposal that the generator fund (i.e., not receive credits for) any uneconomic portion of an upgrade. PG&E needs more information about how providing FTRs/CRRs would be implemented in an LMP (MD02) regime before it can fully comment.

#### Deliverability Standard

*The ISO proposes to "Define, for purposes of studying interconnection requests, a generic deliverability standard"*

##### Comments:

PG&E supports the development of a deliverability standard or benchmark. However, PG&E does not believe that a comprehensive standard need be completed for this compliance filing, but merely referenced in ISO Tariff language and in the LGIA and LGIP. Any deliverability standard must itself be tested on the existing system and then adjusted as needed to give reasonable results before it is finalized and filed at FERC for approval.

#### Economic (Cost/Benefit) Test

*The ISO supports development and application of general guidelines for performing an economic evaluation of transmission upgrades associated with new Generator interconnection requests.*

##### Comments:

PG&E supports the ISO's economic (cost/benefit) test proposal and the ISO's proposal that the generator fund (i.e., not receive credits for) any uneconomic portion of an upgrade. PG&E believes that the ratepayers should only be responsible to pay (provide credits) for upgrades to the extent that such upgrades benefit them. Furthermore, PG&E believes that a cost/benefit test will encourage better siting practices among new Generators.

#### Interconnection Application and System Study Process

##### Comments:

#### Other Elements/Issues

##### Comments:

The LGIA should contain language that specifies designated representatives from the IC, PTO and ISO for operating communications. It could be an appendix or part of Article 8 of the LGIA. PG&E's current Generator Interconnection Agreement contains this information in Section 8.1.

## San Diego Gas and Electric Company

Date Comments Submitted: November 20, 2003  
Name of Person: Linda Brown  
Name of Organization: San Diego Gas & Electric

*The issues and recommendations outlined below are those identified in the ISO's "Preliminary ISO Positions on Large Generator Interconnection Rule", as issued October 28, 2003, as well as other documents posted to the following site*  
<http://www.caiso.com/docs/2003/10/01/200310011700457483.html>.

### General Issues

(e.g., interrelationship between Interconnection process and CPUC Procurement proceeding; comments on ISO Governing Board-FERC compliance process)

#### Comments:

Although there is some overlap with the Interconnection process and the CPUC Procurement proceeding, SDG&E recommends that the ISO and PTOs continue to move expeditiously to meet the Order 2003 compliance filing deadline of January 20<sup>th</sup>, 2004. The recently issued CPUC Proposed Decision on Long-Term Energy Plans for Utilities issued on November 18<sup>th</sup>, 2003 sets forth a resource adequacy requirement that each utility will conduct in its integrated resource planning process, but at first glance appears to lack the necessary detail as to how capacity resources and deliverability requirements will be defined and applied by the CPUC. Moreover, it is unclear from the proposed CPUC decisions how the ISO would incorporate such requirements into the ISO's broader responsibilities for grid-wide reliability (e.g., which includes non-Investor Owned Utilities). As these mechanisms are better defined, the ISO's tariff language can be modified as required. Realistically, SDG&E does not see this happening for some time.

### Interconnection Service

The ISO proposes to *"Define and establish a generic interconnection service under which Market Participants could elect varying levels or quality of service, depending on the level and amount of transmission upgrades they are willing to sponsor"*

#### Comments:

Absent a clearly defined resource adequacy mechanism, SDG&E believes there is no reason in the ISO's and IOUs' January 20, 2004 compliance filings to offer Network Resource Interconnection Service. Instead the ISO should offer only Energy Resource Interconnection Service but include an upgrade study methodology which allows the ISO to identify a range of upgrades (including no upgrades) that would provide the interconnecting generator with varying exposure to possible congestion costs (i.e., the more significant the upgrades, the lower the interconnecting generator's likely exposure to congestion would be). Note that there is no upgrade that will absolutely guarantee that an interconnecting generator could avoid congestion costs: Actual grid conditions will always be different than the grid conditions assumed for purposes of the upgrade studies.

### Retaining distinction between Reliability and Deliverability Network Upgrades

#### Comments:

SDG&E believes it is important to maintain the distinction of reliability and deliverability upgrades. Reliability upgrades have to be built while deliverability upgrades--at the current stage of development of a resource adequacy proposal--are discretionary based on the commercial motivations of the requesting party.

### Payment/Pricing Policy for Interconnection Facilities and Network Upgrades

The ISO proposes to *"If necessary, Generators will be required to fund Network Upgrades necessary as a result of their interconnection but in return receive either a credit – as defined by FERC – or, if applicable, financial property rights in the form of FTRs/CRRs."*

#### Comments:

The statement as written above is too vague. SDG&E seeks clarification on what constitutes "if necessary". SDG&E generally supports the ISO's proposed crediting policy over a period up to five-years whereby generators have the option to choose either transmission credits or property rights equivalent to the network upgrades that are constructed.

### Deliverability Test

The ISO proposes to *"Define, for purposes of studying interconnection requests, a generic deliverability standard"*

#### Comments:

SDG&E believes that it is premature to establish a "generic deliverability standard" without a clearly defined and implemented capacity market. For example, what does it mean commercially for a new or existing generator to have established "deliverability"? Would deliverability give those generators chosen to meet a "capacity requirement" some sort of priority to grid access? Deliverability boils down to the question of who gets to use the grid when not all desired uses of the grid are simultaneously feasible without compromising grid reliability. The ISO's day-ahead, hour-ahead and/or real time markets are designed to express each users' willingness to pay for use of the grid through a bid based congestion management system. It continues to be unclear how a "deliverability" provision could be over-layed on this bid-based system.

### Economic (Cost/Benefit) Test

*The ISO supports development and application of general guidelines for performing an economic evaluation of transmission upgrades associated with new Generator interconnection requests.*

#### Comments:

SDG&E continues to support a methodology that would allow a level of upgrade costs, (up to \$20 million) needed to interconnect the generator reliably to be rolled in automatically. Cost above that level should be rolled in if economically reasonable. Other upgrades, like those needed to relieve congestion, should be rolled in if the net benefits exceed the cost. We support development of general guidelines for an economic evaluation rather than implementation of a single, rigid, economic methodology.

## Calpine Corporation

Date Comments Submitted: November 20, 2003  
Name of Person: Linda Y. Sherif  
Name of Organization: Calpine Corporation

*The issues and recommendations outlined below are those identified in the ISO's "Preliminary ISO Positions on Large Generator Interconnection Rule", as issued October 28, 2003, as well as other documents posted to the following site*

<http://www.caiso.com/docs/2003/10/01/200310011700457483.html>.

### **1. General Issues**

*(e.g., interrelationship between Interconnection process and CPUC Procurement proceeding; comments on ISO Governing Board-FERC compliance process)*

#### **Comments:**

*The views provided here are preliminary. In the absence of proposed tariff and agreement language, Calpine cannot definitively comment on the CAISO's proposal and its compliance with the FERC Final Rule. Nothing in these comments is intended to limit or waive Calpine's ability or right to raise issues in any FERC proceeding.*

*As a general matter, Calpine cautions that deviations from pro forma language must be approached with the utmost trepidation. It is essential to avoid idiosyncratic regional differences that unnecessarily magnify seams issues and reduce the potential efficiencies to be gained from standardization.*

*Moreover, the CAISO compliance filing must ensure that all legal and contractual rights of existing generators, including QF must-take generation, will be honored.*

*Lastly, in order to ensure consistent state and federal action relating to a generator's interconnection, the CAISO and Transmission Owners must take regulatory positions on transmission upgrades before state licensing agencies, such as the California Energy Commission, that are consistent with the requirements of the FERC-jurisdictional large generator interconnection process. In other words, local and state agency review should not become opportunities for parties to circumvent federal law.*

### **2. Interconnection Service**

*The ISO proposes to "Define and establish a generic interconnection service under which Market Participants could elect varying levels or quality of service, depending on the level and amount of transmission upgrades they are willing to sponsor"*

#### **Comments:**

*Calpine supports the concept of different qualities or levels of interconnection service as outlined in the FERC Final Rule. Moreover, Calpine supports the concept of "partial Network Service." In other words, Interconnection Customers should have the flexibility to select from a portfolio of Network Deliverability upgrades to ensure the selective deliverability of generation to meet only certain contractual power sale obligations or during certain time periods/seasons. In all other situations, the Interconnection Customer would be considered an "Energy Resource."*



*Calpine appreciates the CAISO's difficulty in formalizing two levels of interconnection service prior to the CPUC's establishment of rules for capacity resources. Calpine is encouraged that, once the CPUC procurement proceeding is completed, the CAISO plans to revisit greater CAISO Tariff conformity with the FERC Final Rule.*

*In the interim, the CAISO's commitment to allow each Interconnection Customer to specify the level or quality of interconnection service it desires based in part on the level of transmission upgrades it is willing to sponsor is commendable. Calpine strongly believes that Interconnection Customers should have the flexibility to select from a portfolio of Network Deliverability upgrades to ensure the selective deliverability of generation to meet only certain contractual power sale obligations or during certain time periods/seasons. Mutually agreed upon operating constraints and deliverability assurances could be contained in a three-party agreement between the Interconnection Customer, the Transmission Owner, and the CAISO.*

*For this flexibility to be meaningful, it is essential that Interconnection Customers be provided with information to facilitate optimal generation siting. To ensure this, the compliance filing should clarify that the following information will be provided: power flow data, operating procedures, operating nomograms, area load profiles for the local area, detailed transmission maps for the California transmission grid, and a load profile for the CAISO system. Where appropriate or necessary for national security, the information can be provided to Interconnection Customers pursuant to a confidentiality order.*

*When "Network Resource" (or a similar system resource) concept is defined, all generators that have not previously performed Deliverability Upgrades should be permitted to select and perform Network Deliverability Upgrades in order to obtain Network Resource status.*

### **3. Retaining distinction between Reliability and Deliverability Network Upgrades**

#### **Comments:**

*Please see comments on Interconnection Service.*

### **4. Payment/Pricing Policy for Interconnection Facilities and Network Upgrades**

*The ISO proposes to "If necessary, Generators will be required to fund Network Upgrades necessary as a result of their interconnection but in return receive either a credit – as defined by FERC – or, if applicable, financial property rights in the form of FTRs/CRRs."*

#### **Comments:**

*Calpine is extremely pleased to hear that the CAISO will comply with the Final Rule and institute a five-year crediting policy whereby Interconnection Customers may choose either transmission credits or property rights equivalent to the Network upgrades that are constructed.*

*Calpine urges the CAISO to retain this option even after Locational Marginal Pricing (LMP) is implemented. In the interim, to ensure developer confidence sufficient to spur investment, at a minimum, the CAISO must clarify that Interconnection Customers that execute Interconnection Agreements with the expectation of receiving transmission credits will not have those credits involuntarily convert into FTRs or CRRs after LMP is implemented. Given the current uncertainty on CRRs, LMP implementation, and the development of Resource Adequacy Obligations, Interconnection Customers should be provided a grace period during which the Interconnection Customer at its option may convert its transmission credit (or FTRs) to CRRs, when and if CRRs become effective.*

*The Revised White Paper is silent on whether Customers may choose to receive a combination of credits and FTRs. Calpine believes that in many situations, a developer would be more willing to fund upgrades if it could select a combination of credits and FTRs, i.e. 80% credits and 20% FTRs. The CAISO is encouraged to permit such combination choices.*

## **5. Deliverability Test**

The ISO proposes to "Define, for purposes of studying interconnection requests, a generic deliverability standard"

### **Comments:**

*Calpine is very encouraged to hear that: "The ISO is mindful of stakeholder comments about information that may be beneficial for the generator in making decisions about the most appropriate degree of network upgrades. . . . The ISO is developing a methodology for a deliverability study and invites stakeholder comments on the assumptions and parameters for such a study." (Revised White Paper at 11.)*

*As an initial response, in order to evaluate transmission upgrades to fund, Interconnection Customers require: power flow data, operating procedures, operating nomograms, area load profiles for the local area, detailed transmission maps for the California transmission grid, and a load profile for the CAISO system. Where appropriate or necessary for national security, the information can be provided to Interconnection Customers pursuant to a confidentiality order.*

*On the more difficult issue of parameters and assumptions for a benchmark deliverability study, it is imperative that the CAISO sponsor a technical stakeholder process to permit Calpine and other parties to meaningfully provide input. Calpine is especially interested in further discussion on how the study will model (1) legacy generating units, especially in the context of heat rate dispatch; (2) RMR (Condition 1 units); and (3) RMR (Condition 2 units). A stakeholder-wide discussion on how the must-offer requirement intersects with deliverability is also needed.*

## **6. Economic (Cost/Benefit) Test**

*The ISO supports development and application of general guidelines for performing an economic evaluation of transmission upgrades associated with new Generator interconnection requests.*

### **Comments:**

*Calpine is extremely concerned about a time-consuming, bureaucratic hurdle to new investment in the form of an "Uneconomic Network Upgrade Test." Calpine is therefore very pleased to hear that the CAISO will only apply the test in situations where the Network upgrades are projected to exceed twenty million dollars. For large projects, however, this threshold test may not be fair. As a compromise, Calpine recommends modifying the threshold test to the GREATER of \$20 million dollars OR \$80/kW.*

*With regards to the methodology and process for the economic (cost/benefit) analysis, the CAISO should sponsor a technical stakeholder meeting focused on just this topic.*

## **7. Interconnection Application and System Study Process**

### **Comments:**

*An Interconnection Customer should not lose its queue position when it agrees to modify its proposal after (i) evaluating the information provided, including upgrades estimates; and (ii) in direct response to CAISO and Transmission Owner concerns about the Interconnection Customer's proposed generator effects in grid operation.*

*To facilitate optimal generation siting, Calpine further recommends that the CAISO issue an annual list of preferred generation locations throughout the CAISO Control Area, including estimates of available transmission capacity for each suggested site.*

#### **8. Other Elements/Issues**

**Comments:**

*The CAISO compliance filing should conform to the Final Rule's pro forma policy and agreements on all issues and matters not raised in the stakeholder process.*

## California Electricity Oversight Board

Date Comments Submitted: 11-20-03  
Name of Person: Tony Lam  
Name of Organization: CA Electricity Oversight Board

### General Issues

(e.g., interrelationship between Interconnection process and CPUC Procurement proceeding; comments on ISO Governing Board-FERC compliance process)

#### Comments:

Agree that the ISO needs to coordinate the interconnection process with the CPUC Procurement proceeding.

### Interconnection Service

The ISO proposes to *"Define and establish a generic interconnection service under which Market Participants could elect varying levels or quality of service, depending on the level and amount of transmission upgrades they are willing to sponsor"*

#### Comments:

Agree that the ISO not define or offer a Network Resource Interconnection Service until a Resource Adequacy is developed. The EOB is concerned that a Market Participant that elects a lower quality of service that tends to increase the likelihood of curtailment could affect the deliverability of resources that previously qualified under Resource Adequacy requirements.

### Retaining distinction between Reliability and Deliverability Network Upgrades

#### Comments:

Agree in retaining distinction between the two types of upgrades. The ISO should include in its evaluation of reliability upgrades the real time operational concerns caused by increased congestion that may occur with new generation.

### Payment/Pricing Policy for Interconnection Facilities and Network Upgrades

The ISO proposes: *"If necessary, Generators will be required to fund Network Upgrades necessary as a result of their interconnection but in return receive either a credit – as defined by FERC – or, if applicable, financial property rights in the form of FTRs/CRRs."*

#### Comments:

Agree. However, crediting should require that a cost/benefit analysis be completed to ensure that the upgrade results in net benefits to the transmission system.

### Deliverability Test

The ISO proposes to *"Define, for purposes of studying interconnection requests, a generic deliverability standard."*

Comments:

Agree that there should be a deliverability standard. The standard should be used to determine what level or quality of interconnection service a new generator can qualify for without transmission upgrades.

#### Economic (Cost/Benefit) Test

*The ISO supports development and application of general guidelines for performing an economic evaluation of transmission upgrades associated with new Generator interconnection requests.*

Comments:

If an upgrade fails the criteria of this analysis, then the applicant should only receive CRRs for upgrades so that other users of the transmission system don't end up paying for upgrades for which they receive no benefit. If only part of a transmission upgrade passes the criteria, then that portion could be allowed a credit or CRR, at the applicant's option. These principles might also apply to reliability upgrades, such as when the interconnection might require a lot of equipment to be replaced for reliability at one location versus another location.

#### Interconnection Application and System Study Process

Comments:

#### Other Elements/Issues

Comments:

**California Department of Water Resources  
State Water Project**

Date Comments Submitted: November 20, 2003  
Name of Person: David Bonaly  
Name of Organization: Department of Water Resources, State Water Project

General Issues

(e.g., interrelationship between Interconnection process and CPUC Procurement proceeding; comments on ISO Governing Board-FERC compliance process)

Comments:

**No comments.**

Interconnection Service

The ISO proposes to *"Define and establish a generic interconnection service under which Market Participants could elect varying levels or quality of service, depending on the level and amount of transmission upgrades they are willing to sponsor"*

Comments:

**The SWP supports varying levels of interconnection service but would like a clarification of the term "generic" in reference to interconnection service.**

Retaining distinction between Reliability and Deliverability Network Upgrades

Comments:

**No. The distinction between Reliability and Deliverability should be expanded to include that Delivery must be considered for upgrades and new connections that want full network service. Reinforcements or upgrades must be paid for by the new connecting entity or generation.**

Payment/Pricing Policy for Interconnection Facilities and Network Upgrades

The ISO proposes to *"If necessary, Generators will be required to fund Network Upgrades necessary as a result of their interconnection but in return receive either a credit – as defined by FERC – or, if applicable, financial property rights in the form of FTRs/CRRs."*

Comments:

**FTRs/CRRs are designed to offer load a hedge against transmission and congestion costs. Assigning FTRs or CRRs to generators conflicts with the purpose of the upgrade itself. The purpose of upgrades is to relieve congestion and not create CRR revenues for interconnecting generators. If FTRs or CRRs are issued for transmission upgrades, the revenues generated by the FTR/CRR should be tracked. Once the revenues collected are equivalent to the cost of the transmission upgrade, the CRR/FTR associated with the transmission upgrade should expire.**

### Deliverability Test

The ISO proposes to *"Define, for purposes of studying interconnection requests, a generic deliverability standard"*

Comments:

**The SWP believes this is acceptable as the ISO cannot study every possible permutation of delivery.**

### Economic (Cost/Benefit) Test

*The ISO supports development and application of general guidelines for performing an economic evaluation of transmission upgrades associated with new Generator interconnection requests.*

Comments:

**The State Water Project supports the development and application of an economic analysis for evaluating transmission upgrades. One benefit of an economic analysis is that it functions to limit uneconomic expansion of the transmission grid when siting generators**

### Interconnection Application and System Study Process

Comments:

**No comments**

### Other Elements/Issues

Comments:

**Direct Assignment Facilities are not transmission facilities. Defining Direct Assignment Facilities in the ISO Tariff Amendment 39 as transmission facilities conflicts with the FERC definition for Interconnection Facilities. The SWP proposes that the ISO adopts the FERC definition of Interconnection Facilities. This would also provide a clarification for where the point of interconnection is located.**

## **Sempra Energy Global Enterprises**

Date Comments Submitted: November 20, 2003  
Name of Person: Barbara Clemenhagen  
Name of Organization: Sempra Energy Global Enterprises

Pursuant to the November 14, 2003 Market Notice, Sempra Energy Resources ("SER") hereby submits the following comments in response to the CAISO on Order No. 2003 and the elements proposed by the California ISO for its January 20, 2004 Compliance Filing to the Federal Energy Regulatory Commission ("FERC").

### **I. Comments**

#### **General Issues**

SER is concerned that after three years and innumerable meetings, conferences and working papers on Generation Interconnection the CAISO continues to resist the industry's movement towards standardization and, more recently, the rules established in FERC's Order No. 2003. The Order No. 2003 rules are the product of extensive stakeholder efforts and contributions, which included the CAISO. Order No. 2003 is well considered and superior to any California-only rules or nomenclature that the CAISO may propose to establish in a limited 3-month stakeholder process in which participation has been limited at best. That being said, SER is aware that certain Order No. 2003 rules have less relevance in this transitional market and it is likely that the nature and worth of a "network resource" will only be revealed through contractual valuations and/or the creation of a capacity market.

On November 18, 2003, California Public Utilities Commission ("CPUC") Administrative Law Judge Walwyn issued a Draft Decision (Interim Opinion) and concurrently Commissioner Peevey issued an Alternate Draft Decision under CPUC Rulemaking 01-10-024. 1 Both Drafts provided some illumination on the CPUC's perspective regarding future resource adequacy requirements; however, Commissioner Peevey's alternate establishes a reserve requirement for utilities' retail customer load only, and requests that the ISO, working with the CPUC, set overall planning reserves at the same level (17 percent) for other non-IOU load-serving entities. The inconsistent drafts have left significant uncertainties regarding how expansive the final rule will be on the resource adequacy issues. For example, the CPUC's draft decisions are unclear with regard to the CAISO's role in creating a robust resource adequacy forward market or strictly market reserve/adequacy assessment and evaluation. The CPUC's December 10th workshop should elucidate certain outstanding issues; however, SER is not confident that implementation issues related to the deliverability and capacity elements required to implement Order No. 2003 will be resolved by a single workshop.

SER, however, continues to believe that California's state agencies should continue to promote an expeditious increase in the CAISO's role in determining the State's forward resource adequacy market. Rather than expend limited 1 Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development resources on drafting temporary tariff language to comply with Order No. 2003, the CAISO should consider whether it would be more efficient and expedient to seek FERC approval for an extension of time to accommodate the CPUC's pending process and potential resolution of a long-term resource adequacy plan for the State. This will allow the CAISO to make a compliance filing that reflects the robust dialogue that formed Order No. 2003 and the "regional" differences that may justify a limited, tailored deviation from Order No. 2003's standardized requirements. In the interim, the current CAISO tariff (Amendment 39) procedures could remain in place.



## **Interconnection Service**

SER does not support and considers the CAISO's "generic" service a poor substitute for a comprehensive Order No. 2003 compliance filing. Additionally, the CAISO's proposed justification for filing differences is not in the spirit of the FERC's intention to accommodate ISO/regional differences. If, however, the CAISO chooses to file temporary tariff language on January 20, 2004 as a transitional measure pending issuance of greater guidance from the CPUC regarding a final resource adequacy rule, the CAISO should advise FERC of the circumstances necessitating a temporary tariff and must demonstrate that the proposed implementation differences are superior to implementing Order No. 2003 until the CAISO determines the deviations that are necessary to address California-specific market issues.

The CAISO's "generic" interconnection service tariff filing will draw on the FERC process along with the current California-specific stakeholder dialogue to establish the criteria for upgrades for generation interconnection and determine the nature of "regional" differences that necessitate deviation from Order No. 2003. The FERC clearly stated that the Order No. 2003 criteria were to be established by the Regional State Entity (RSE) and employed by the "independent" entity. Setting aside the independence issue, California has yet to establish an RSE. Thus, it seems premature to consider deviation from Order No. 2003 rules.

The CAISO's current position seems to be offering an equivalent interconnection service with optional levels of interconnection service; a "Network" level is inherently included in the proposed "generic" service. SER understands the dichotomy; the State resource adequacy program is the horse to the proverbial cart. If the CAISO finds that a tariff filing is necessary, SER believes that every accommodation should be made to mirror the definitions and procedures in Order 2003. A faithful interpretation of Order 2003 with limited deviation to accommodate this transitional period should be the easiest to implement and result in the least issues when the final resource adequacy decision is made for the State. Furthermore, SER believes that California is best served by a single CAISO Generation Interconnection tariff rather than a CAISO tariff and three IOU conforming tariffs.

## **Payment/Pricing Policy for Upgrades**

In the case of crediting or rights for upgrades, SER supports the FERC Order No. 2003 rules. If the Generator funds Network Upgrades that are identified and justified as a result of their interconnection, then the generator should receive either a refund or credit – as defined by FERC – or, if applicable, financial property rights in the form of FTRs/CRRs.

## **Deliverability Test**

SER supports the CAISO's proposal to "Define, for purposes of studying [network service] interconnection requests, a generic deliverability standard". However, SER believes that the CAISO cannot develop such a definition in isolation and without a commitment to cooperate in a reasonable and timely manner from all state agencies that may need to review and/or approve deliverability related upgrade. The CAISO needs to engage stakeholders in a dialogue to develop fair and reasonable deliverability standards in concert with the regional dialogue on resource adequacy to determine the best means by which it can resolve issues and meld the requirements related to deliverability, resource adequacy, regulatory comity, and Order No. 2003 in California's energy market. The deliverability standard is unnecessary until the implementation of a resource adequacy standard. In any case, deliverability should be optional and market participants should be able to choose their level of Interconnection service.

### **Economic (Cost/Benefit) Test**

SER supports the CAISO working with stakeholders to develop guidelines for workable methodologies for performance of economic evaluation of network upgrades associated with new Generator interconnection requests. Although, it may be impractical to develop a single, rigid, economic methodology that would apply in all cases market-wide, guidelines would be helpful. SER supports the current tariff language that allows the flexibility for any party to sponsor/present a cost-benefit analysis and associated recommended transmission upgrades.

### **Interconnection Application and System Study Process**

The CAISO should adopt the Order No. 2003 Large Generator Interconnection Procedures ("LGIP") and propose to deviate from the LGIP only in those circumstances that justifiably address California-market specific issues in a manner superior to implementing Order No. 2003.

### **II. Conclusion**

WHEREFORE, for the reasons explained above, SER respectfully submits these comments to the CAISO on Order 2003.

Respectfully submitted,  
☐ *Via email*  
Barbara L. Clemenhagen

Dated: Thursday, November 20, 2003