

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

<b>Standardization of Generator</b>	)	<b>Docket No. RM02-1-000</b>
<b>Interconnection Agreements</b>	)	
<b>and Procedures</b>	)	
	)	

Comments of the California Independent System Operator Corporation on the Commission's Notice of Proposed Rulemaking on Standardization of Generator Interconnection Agreements and Procedures

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The California Independent System Operator Corporation ("CA ISO") appreciates the opportunity to provide comments on the Commission's Notice of Proposed Rulemaking on Standardization of Generator Interconnection Agreements and Procedures ("NOPR") issued April 24, 2002. The CA ISO is strongly committed to working with the Commission and other interested parties to develop non-discriminatory and workable procedures and agreements for interconnecting new generation to the transmission system. The CA ISO supports the creation of region-appropriate *pro forma* interconnection procedures, agreements, and services that ensure that all parties can interconnect to the transmission system on a non-discriminatory basis. The CA ISO believes that the Commission must specify and create a foundation for further development of region-appropriate *pro forma* procedures. Such a foundation must be based on sound reliability, operational and economic principles, yet should be sufficiently flexible to allow for varying business arrangements and innovation; variation that is supportable based on the specific requirements of each region. The procedures must also be consistent with the respective responsibilities and expertise of transmission owners and Regional

Transmission Organizations (RTOs and Independent System Operators (ISOs). The CA ISO supports the Commission's efforts to develop such a foundation.

The CA ISO recognizes that clear and uniform interconnection procedures are a necessary first step in facilitating the construction of new generating capacity. Establishment of consistent interconnection procedures will ensure that, consistent with the Commission's open-access principles, each new facility is treated in an open and non-discriminatory manner. To foster these objectives and in accordance with the Commission's direction, the CA ISO filed Amendment No. 39 to the CA ISO Tariff in April 2001. The Commission approved this amendment on June 4, 2002. Previously, the details of the interconnection application process were contained only in the individual tariffs of the CA ISO's Participating Transmission Owners. In order to promote consistency throughout the CA ISO Controlled Grid, these requirements are now defined in the CA ISO Tariff. Moreover, by clearly establishing the cost-responsibilities of new generators interconnecting to the grid, the CA ISO and Participating Transmission Owners, who filed compatible changes to their Transmission Owner Tariffs, have reduced the uncertainty and risk to developers and thereby will facilitate development of new capacity in California. The CA ISO appreciates the Commission's efforts to stabilize the California electricity market and create a stable environment for investment in the market. Acceptance of Amendment No. 39, subject to the outcome of this rulemaking proceeding, will further those objectives.

Prospectively, the CA ISO urges the Commission to now focus on the important and critical task of integrating the policies at issue in this rulemaking with those at issue in its concurrent rulemaking regarding the creation of a wholesale Standard Market Design (SMD). It is imperative that the Commission ensure that the same economic principles that form the

foundation of the SMD establish the framework for the Commission's generator interconnection policy. Absent this coordination, the Commission's goal of creating accurate and meaningful locational price signals may be lost, and - economic price signals established under one framework may be obviated or muted by the price signals established in the other.

As the Commission recently stated when setting forth general principles for the SMD:

Standard market design should create price signals that reflect the time and locational value of electricity. The price signal—here, created by LMP should encourage short-term efficiency in the provision of wholesale energy and long-term efficiency by locating generation, demand response and/or transmission at the proper locations and time. But while price signals should support efficient decisions about consumption and new investment, they are not full substitutes for a transmission planning and expansion process that identifies and causes the construction of needed transmission and generation of demand response.

Working Paper on Standardized Transmission Service and Wholesale Electric Market Design issued March 15, 2002 at page 6.

The CA ISO could not agree more. The Commission must establish a generator interconnection policy that furthers the above stated objectives and is fully integrated with LMP-based pricing. Thus, the Commission should be careful not to establish a generator interconnection policy that makes new generators practically indifferent to location (i.e., a policy where the costs of all transmission upgrades necessitated by their interconnection are rolled into average transmission rates) and is not complementary to the locational price signals established under a LMP-based regime.

The CA ISO greatly appreciates the hard work of the Commission and the stakeholders in considering these important issues. The comments contained herein attempt to build on the important foundations already established. The CA ISO has structured its comments as follows: (1) General Comments and concerns relative to the Generator Interconnection process; (2) specific comments on the Standard Generator

Interconnection Procedures (“SGIP”) and Standard Generator Interconnection and Operating Agreement (“SGIA”) and (3) concluding remarks of the CA ISO. The CA ISO previously submitted comments on certain “best practices” in the Advance NOPR phase of this proceeding and will not repeat those comments here.

**I. STANDARD GENERATOR INTERCONNECTION PROCEDURES AND STANDARD GENERATOR INTERCONNECTION AND OPERATING AGREEMENT**

**A. General Comments**

1. The CA ISO believes that a strict hierarchy of relationships under the overall control of the RTO/ISO Tariff must govern the connection of new generators.

The process by which a new generation resource is connected to the system involves a series of governing documents. These documents include: (1) the RTO/ISO regional tariff; (2) individual Transmission Owner tariffs; and (3) the Interconnection Agreement.

The CA ISO believes that the FERC-approved RTO/ISO tariff should be the controlling document, with the Transmission Owner tariffs and the Interconnection Agreement playing an implementing role. The CA ISO’s recently approved tariff language on generator interconnection was the subject of a lengthy stakeholder process in which many market participants participated. Such Tariff language appropriately codifies the ISO Controlled Grid-wide policy regarding the interconnection of new generators.

2. The Interconnection Agreement Should Be Between the Generator and the Transmission Owner Only

The CA ISO believes that the Interconnection Agreement is appropriately executed between the Generator and the Transmission Owner. It should not be a three-party agreement between the RTO/ISO, the Transmission Owner and the Generator. The current version of the NOPR appears to contemplate that the RTO/ISO would be a signatory to the Interconnection

Agreement. The CA ISO believes that such an arrangement will inappropriately expand the role and, concomitantly, the liability of the RTO/ISO. In general, Interconnection Agreements typically contain provisions regarding the detailed cost-recovery mechanism related to interconnection facilities (both direct and, if applicable, network), the arrangements for physical and electrical operation of those facilities, rights of access by the parties, and the other rights, obligations and liabilities between the asset owner and the customer. Since the RTO/ISO may not either own or physically operate the interconnection facilities in question, it would be inappropriate for them to insert themselves in an arrangement between the owner and the user/applicant. Moreover, as a not-for-profit corporation, the CA ISO is concerned that a three-party arrangement may increase its liability with regard to the physical operation of the facilities and, as such, potentially increase costs to its customers (all market participants) through increased insurance costs and potential litigation.

While the CA ISO does not believe it appropriate or necessary for a RTO/ISO to become a party to the Interconnection Agreement, the CA ISO does believe there are certain matters, typically detailed in a an interconnection agreement, on which it must have input. In particular, the ISO must have oversight and final approval of any operating procedures that are deemed to be necessary for the safe and reliable operation of the new generating unit and the system. For example, it is not uncommon for the output of new generating units to be limited under certain real-time operating contingencies. In these circumstances, the transmission provider and generating unit owner agree on Special Protection Schemes (SPS) or operating practices necessary to operate the system reliably. As the entity charged with operation control of the transmission system, the CA ISO believes that it is critical that the RTO/ISO have

assurances that any such SPS or operations practice can and will work properly, and does not conflict with its established operations procedures.

Therefore, a section should be added to the Interconnection Agreement that would codify that all such arrangements are subject to final approval by the RTO/ISO and are subject to the applicable provisions of the RTO/ISO Tariff, Protocols, and operations procedures.

### 3. Credit for Transmission Network Upgrades

Interconnection pricing and cost allocation are critical elements to consider in achieving the goal of reduced barriers to entry for new generation while maintaining accurate locational price signals. The CA ISO supports the Commissions efforts to establish the right incentives for both transmission providers and generators. However, the long-term balance of these objectives – objectives that often are in conflict - must ensure that the generator considers the cost implications of the network upgrades caused by the project and that transmission customers paying for these upgrades receive the benefit of the additional generation in the market.

The CA ISO is concerned that the proposed rule will not result in a clear locational price signal to the generator; a price signal that by necessity must complement the price signal established under an LMP-based pricing regime. While a LMP-based system will provide price signals necessary for efficient short-run dispatch decisions and may be useful as a general indicator for the location of new generation, LMP is not likely to provide a complete locational price signal. In order to develop a completely accurate locational price signal, interconnection costs must be included. The CA ISO is concerned that the Commission's proposed crediting methodology may mute any such supplemental price signal. The CA ISO is concerned that the effect of crediting (i.e., returning) all interconnection-related costs, with interest, within a term of five years simply diminishes any locational price signal and makes the generator

almost indifferent to location – a result that is contrary to the Commission’s stated objective. The CA ISO recommends that the Commission adopt, on a broader basis, the pricing provisions recently approved by the Commission in Amendment 39 to the CA ISO Tariff (ISO Tariff Section 5.7.5 (c)). Amendment No, 39, which established the ISO’s “New Facility Interconnection Policy” or NFIP provides that new generators pay the cost of direct connection facilities and the cost of reliability upgrades (even those beyond the first point of interconnection) necessitated by their interconnection. However, the NFIP also provides that:

The generator shall be responsible for the upgrade costs only if the necessary network facilities are not included in the ISO Controlled Grid Transmission Expansion Plan approved as of the new Facility Operator’s Completed Application Date, or the date for the installation of a network facility is advanced by the interconnection of the new Facility, in which case the generator shall be responsible only for the incremental costs associated with the earlier installation of the network facility.

The CA ISO continues to believe that this is a reasonable approach. The cost-responsibilities in place under the ISO’s NFIP will ensure that: (1) generation developers face a meaningful locational price signal and thereby make efficient siting decisions; and (2) do not pay for network upgrades that are otherwise proposed to be completed by the RTO/ISO/TOs. The crediting proposal set forth in the NOPR may make generation developers indifferent to location. Under the Commission’s proposal, a generator may decide to locate in an area of the system where, as a result of its interconnection, the transmission provider may have to undertake multi-million dollar network expansions in order to preserve reliability. In such circumstances, the new generator may be indifferent to the cost of these expansions because it knows that even if it must initially fund the upgrade, it will receive its money back, with interest, in five years. Such an outcome is clearly sub-optimal if the generator could have located in a different location; a location that would not necessitate expensive network

upgrades. If each generator has the complete discretion to make such determinations, the Commission's proposed crediting methodology is seriously flawed and will likely result in inefficient expansion of the transmission system.

Moreover, the CA ISO is also concerned about possible stranded transmission investment. Normal fluctuations in the competitive generation market may give rise to generating plant closures (or, depending on the resource's mobility, relocation). Under such circumstances, the transmission provider and its customers will be left with the cost of the transmission necessitated by the plant's original interconnection while receiving none of the supposed benefit (i.e., additional generation), thus effectively stranding the cost of such transmission. Consider for example, the scenario in which a peaking generator (mobile turbine) is constructed in a location necessitating major transmission upgrades. Under the Commission's crediting mechanism, once the generator reaches the milestone of Commercial Operation Date, should the market no longer supports such capacity (i.e., there is a surplus of capacity), the generator is free to walk away, leaving the cost of the new facilities to be picked up by the transmission provider and its customers, who will receive no benefit. Therefore, CA ISO believes it is appropriate that a generator must remain operational and provide available capacity during the credit refund period. Consequently, a generator that ceases operating within the credit period should not receive further payment.

Notwithstanding those concerns, the CA ISO is supportive of a proactive transmission expansion policy wherein a RTO/ISO identifies and promotes development of transmission projects that may have a system-wide benefit. Such projects could very well benefit generation developers by enhancing their ability to deliver their full output to load. Consumers are also likely to benefit from the increased access to new supply (and perhaps a more



competitive generation market). Under those circumstances, it may be appropriate for the RTO/ISO to support such projects and for the costs of the project to be rolled into transmission rates. As the ISO has previously informed the Commission, the ISO is in the process of developing a methodology for evaluating and quantifying the benefit of such transmission projects.

Finally, CA ISO believes it is essential that the crediting mechanism be completely defined but allow flexibility for market designs where generators do not pay for transmission service. For example, under the CA ISO Tariff, the transmission Access Charge and Wheeling Access Charges are paid by loads. As a result, there is no transmission service reserved by the generator which to “credit”. In order to compensate generators for their outlays, a mechanism would need to be established under which the Participating Transmission Owner would be responsible for a stream of payments to the generator after the facilities become operational and the Participating Transmission Owner would be able to recover these costs in its transmission rates. Any such mechanism must be consistent with the final rules resulting from this proceeding and that of the Standard Market Design proceeding.

#### 4. Appropriate Delegation of Functions – Regional Variation

The CA ISO supports the Commission’s efforts to create *pro-forma* interconnection procedures and agreements. However, the Commission’s attempt to standardize these arrangements need not, and should not, necessitate mandatory business arrangements nor prohibit an effective and efficient division of responsibilities. For example, today the ISO and its Participating Transmission Owners (PTOs) divide responsibility for the performance of certain tasks. Typically, under the ISO’s grid planning process, the PTOs perform most system impact and facilities studies, subject to review and confirmation of the results by the ISO. This

arrangement has historically worked quite well. The Commission's proposed *pro-forma* procedures and agreements must be sufficiently flexible to accommodate such an approach. Establishing an arbitrary framework, wherein each party has a prescribed role, will unnecessarily upset historical working relationships and may require the ISO to hire additional staff.

Under its NFIP, the CA ISO believes that it has struck an appropriate balance of responsibilities between itself and its PTOs, while also providing third-parties with an opportunity to sponsor their own studies and analyses. For example, the NFIP provides for a study process in which the CA ISO receives all interconnection requests and manages the interconnection queue. The CA ISO directs the interconnecting Transmission Owner to perform the required studies and the Owner must complete or cause to be completed all studies directed by the ISO in the timelines provided.

Therefore, the CA ISO proposes that Transmission Providers be allowed to delegate, as appropriate, certain functions as required by the Interconnection procedures or Interconnection Agreement. As part of each RTO/ISOs' compliance filing incorporating the provisions of the Final Rule issued in this proceeding, each RTO/ISO should provide a delineation of responsibilities between the RTO/ISO and the TOs participating in such RTO/ISO. Further, a section should be added to both the Interconnection Procedures and Interconnection Agreement that would inform all parties that such an approved assignment of responsibilities may exist. For example:

The Parties may assign or delegate one or more of the specific responsibilities assigned to them in this [Interconnection Agreement][Interconnection Procedure] to another Party provided such assignment is set forth in either parties approved Tariff. If a Party so assigns or delegates a responsibility, the party to whom the responsibility was assigned in this [Interconnection Agreement][Interconnection Procedure] shall be responsible for ensuring that responsibility is satisfactorily

discharged under the requirements of this [Interconnection Agreement][Interconnection Procedure].

In all cases, however, responsibilities associated with the *physical* operation of transmission assets must largely remain with the TO, because the TO is ultimately liable for its own facilities, and usually is the entity that retains the obligation to build new facilities. Responsibilities associated with *operational* control of the grid and assuring non-discriminatory access to the physical facilities should belong to the RTO/ISO Transmission Provider.

5. The SGIP Should Recognize that Certain Functions May Be Performed by ISOs or RTOs and Other Functions by Transmission Owners

As noted above, generic use of [Transmission Provider/Transmission Owner] throughout the document is not appropriate. The procedures should be revised so that the Transmission Provider (such as an RTO or ISO) is responsible for overseeing the interconnection process but that Transmission Owners can perform studies and construction.

The CA ISO takes advantage of the expertise and resources of its Participating Transmission Owners to perform these types of activities. The CA ISO has found this approach to work well and eliminates the need to hire more CA ISO personnel. Moreover, the SGIP appear to contemplate that Transmission Owners would continue to have responsibility for processing interconnection requests to the distribution system. Requiring the ISO or RTO to perform all of the studies and construction for the transmission system could lead to a duplication of resources if both entities would need to support all aspects of interconnections. Therefore, the Commission should carefully and deliberately specify the functions that should be performed by RTOs/ISOs and those that can be performed by Transmission Owners to ensure a non-discriminatory and efficient interconnection process.

## 6. Interconnection Service

The CA ISO supports the Transmission Owner and RTO/ISO position that while a well-defined list of products and services is important, there may not be a single best or only set of services. More importantly, these services should not be defined in the SGIP but should be contained in the RTO's/ISO's (or other Transmission Provider's) tariff. It is the nature and substance of the transmission and other core services that should determine the scope of the interconnection services offered. For example, while the CA ISO does not currently provide "network integration" service as specifically defined under the Commission's *pro forma* tariff (e.g., there is no need to pre-specify network resources under the CA ISO Tariff), the CA ISO has proposed in its Market Design 2002 proposal the adoption of a capacity obligation on load-serving entities. The specific requirements of that obligation may necessitate the adoption of enhanced interconnection and/or deliverability requirements – requirements that may not otherwise be contemplated under the Commission's defined network service.

## 7. Processing Time and Meetings

The CA ISO agrees that each RTO/ISO/Transmission Provider should establish a generic processing schedule that is applied and adhered to on a non-discriminatory basis. However, the CA ISO has certain concerns with respect to the schedule outlined in the draft SGIP. Specifically, five-day turn around times are too short. The minimum period should be ten days. In addition, the draft SGIP has numerous demands for meetings. All meetings should allow for negotiation between the parties to extend timelines, and may be based on the fact that no impacts occur to Generation projects later in the queue – if both parties agree that a meeting is not necessary, why mandate that it take place? The process schedule in the CA ISO's Amendment No. 39 establishes study performance requirements and timelines that

comport with Commission precedent, while allowing for flexibility based on anticipated dialogue between the applicant and the CA ISO.

#### 8. Metering

Section 7 of the SGIA appears to require metering only at the point of interconnection. Such an approach may be acceptable for generators that place all of their output directly on the grid. In the case of generators that serve “behind-the-fence” load, however, metering only at the point of interconnection is inconsistent with Western Electricity Coordinating Council (WECC) Control Area requirements.

The WECC requires the ISO to procure reserves for all “firm” loads within the control area. According to the WECC, behind-the-meter loads are “firm” loads, unless they can be simultaneously curtailed in the event of a generator outage. To comply with this WECC requirement, the CA ISO tariff requires gross telemetry on Generation in order to accurately forecast its Control Area firm load because it is that forecast which the CA ISO uses in determining its obligations to procure Ancillary Services in the Day-Ahead and Hour-Ahead scheduling processes. The CA ISO also requires gross telemetry in order to ensure that injections into the system match withdrawals from the system in real-time. Additionally, the CA ISO requires revenue meter data on behind-the-meter Loads in order to ensure that the cost of the services that the CA ISO provides are appropriately allocated to the responsible market participants.

#### 9. Damages

Liquidated damages should not be imposed on transmission providers undertaking their best efforts to perform the assigned work. Moreover, the concept of damages must track to the entity performing the work. As noted above, many of the studies and construction

functions may be undertaken by the transmission owner rather than the RTO/ISO. The RTO/ISO should not be a guarantor for the transmission owner. For those responsibilities performed by the RTO/ISO, generators are afforded recourse via Section 210 FPA.

#### 10. Queuing

While the CA ISO supports establishing a queue priority based on application date, as was approved in Amendment No. 39 to the CA ISO Tariff, the Commission should be aware that having a queue based on application date rather than operating date may result in a contentious shift in cost-responsibility among applicants should an applicant that is higher in the queue either withdraw its application or lose its queue position. For example, if a project is cancelled or delayed, it may require the ISO/TO to re-study other applicants and may potentially result in different cost allocations. It raises the question of what happens if a project is delayed or withdrawn that was otherwise responsible for paying for facilities needed by a project lower in the queue. The CA ISO attempted to address these issues in part by requiring applicants that either withdraw their application or lose their queue position to pay the cost of re-studying other applicants' interconnection requests. As noted in CA ISO Tariff Amendment No. 39, the CA ISO did not resolve the potentially contentious issue of re-establishing cost-responsibility for new generators when one applicant either withdraws its application or loses its queue position. The CA ISO reasoned that this was a necessary consequence of establishing cost-responsibility based on queue position and that applicants should be forewarned that their individual cost-responsibility could change based on changes to the queue.

The CA ISO also attempted to establish a reasonably flexible queuing process (e.g., one that permits extension of time to satisfy certain milestones) with necessary but achievable

milestones. This proposed rule would allow a generator to submit a proposed In-Service Date that could be ten years after the submittal of an Interconnection Request. Yet, the Interconnection Procedure does not require any valid or enforceable milestones until the Commercial Operation Date is achieved. At a minimum, generators should be required to complete all local regulatory siting Data Adequacy Requirements within a specific time and must obtain a new facility license within a reasonable period afterwards. Any generator that does not meet the applicable milestones should not be allowed to maintain its queue position. Importantly, the milestones proposed by the CA ISO as part of Amendment No. 39 are generally tied to specific requirements for siting generating plants in California. Thus, once again, the CA ISO urges the Commission to allow for flexibility to adopt requirements that are specific to each region.

#### 11. Reactive Power

The SGIA states “To the extent that no rate schedule is in effect at the time the Generator is required to provide or absorb any Reactive Power under this Agreement, the Transmission Owner / Transmission Provider agrees to compensate the Generator...” CA ISO believes the procurement of reactive power should be left to another proceeding. It is perhaps best left to the regional market design. For example, the CA ISO Tariff already addresses this issue.

##### 2.5.3.4 Voltage Support.

The ISO shall determine on an hourly basis for each day the quantity and location of Voltage Support required to maintain voltage levels and reactive margins within WSCC and NERC criteria using a power flow study based on the quantity and location of scheduled Demand. The ISO shall issue daily voltage schedules which are required to be maintained for ISO Controlled Grid reliability. All other Generating Units shall comply with the power factor requirements set forth in contractual arrangements in effect on the ISO Operations Date, or, if no such contractual arrangements exist and the Generating Unit exists within the

system of a Participating TO, the power factor requirements applicable under the Participating TO's TO Tariff or other tariff on file with the FERC.

All Participating Generators shall maintain the ISO specified voltage schedule at the transmission interconnection points to the extent possible while operating within the power factor range specified in their interconnection agreements or, for Regulatory Must-Take Generation, Regulatory Must-Run Generation and Reliability Must-Run Generation consistent with existing obligations. For Generating Units, that do not operate under one of these agreements, the minimum power factor range will be within a band of 0.90 lag (producing VARs) and 0.95 lead (absorbing VARs) power factors. Participating Generators with Generating Units existing at the ISO Operations Date that are unable to meet this operating power factor requirement may apply to the ISO for an exemption. Prior to granting such an exemption, the ISO shall require the Participating TO or UDC to whose system the relevant Generating Units are interconnected to notify it of the existing contractual requirements for voltage support established prior to the ISO Operations Date for such Generating Units. Such requirements may be contained in CPUC Electric Rule 21 or the Interconnection Agreement with the Participating TO or UDC. The ISO shall not grant any exemption under this Section from such existing contractual requirements. The ISO shall be entitled to instruct Participating Generators to operate their Generating Units at specified points within their power factor ranges. Generators shall receive no compensation for operating within these specified ranges.

If the ISO requires additional Voltage Support, it shall procure this either through Reliability Must-Run Contracts or, if no other more economic sources are available by instructing a Generating Unit to move its MVar output outside its mandatory range. Only if the Generating Unit must reduce its MW output in order to comply with such an instruction will it be compensated in accordance with Section 2.5.18.

The question of compensation for reactive power also highlights the potential for differences between existing interconnection agreements that may address issues in a certain manner and a new *pro forma* agreement that may be a departure from past practice.

## 12. Emergency Conditions

The SGIA states, "Any condition or situation that results from a lack of sufficient generation capacity to meet load requirements or that results solely from economic conditions shall not constitute an Emergency Condition." CA ISO considers a lack of generation to be an



emergency condition that clearly creates reliability implications and, at a minimum, warrants an emergency notification such as Stage 1,2, or 3 (as provided for under the CA ISO's established procedures). Without a declaration of Emergency Condition, the Transmission Provider will not be able to invoke its authority under SGIA section 13.5 to preserve reliability as required in 13.5.1(ii). Thus, that phrase should be deleted from the qualification to the definition.

**B. Specific Comments on the Interconnection Procedures**

1. Section 1.33: This definition needs clarification. It is unclear as to the equipment that will make up the Point of Change of Ownership. For example: Who will pay for substation breakers needed to connect a generator to the transmission providers' substation?

2. Section 3.1 of the SGIP states that the Generator shall submit a separate interconnection request for each site and may submit multiple interconnection requests for a single site. Do multiple interconnection requests only refer to routing and interconnection arrangements? If so, how many alternatives are acceptable under one submittal? Does an interconnection request for the same site, but at different voltage levels, constitute one or two requests? Each one of these voltage levels could have multiple alternatives. Is the \$10,000 deposit associated with each interconnection request, thus resulting in multiple deposits for multiple requests at a single site?

3. Section 3.2: If generator requests are to be studied as both "Network" and "Energy," does this require that the generator make two \$10,000 deposits?

4. Section 3.5: The NOPR requires the Transmission Provider to coordinate the conduct of any studies to determine the impact on any other Affected Systems. Yet, the Transmission Provider is still required to meet the study timelines. This can be a very difficult

task due to the lack of data about neighboring systems, which can lead to delay in completing the studies. Also, it may not be acceptable for one Transmission Provider to identify what other neighboring utilities should build to accommodate the proposed new generation for the case where the neighboring utility is not able to respond to inquiries adequately within the prescribed time. The CA ISO proposes that the Generation Developer should sign an Interconnection Study Request to initiate separate studies with Affected Systems to identify impacts on their systems. This will ensure responsibilities are assigned and study costs are covered for the affected systems.

5. Section 6.1 of the SGIP states that the “Generator shall provide the technical data called for in Appendix 2.” The correct reference appears to be Appendix 1, Attachment A.

6. Section 6.2: “The interconnection Feasibility Study will consider the Base Case as well as...”. What does Base Case mean? The study should cover stressed conditions that include off-peak scenarios. This section also needs to be expanded to include sensitivities with Generators that are behind in the queue but are scheduled to be completed prior to a Generator that is ahead in the queue. For example: CA ISO experienced a problem on a few occasions where a TO refused to include in its studies Generators that were already paralleled to the grid because, in the queue, they were behind the Generator being studied. The Feasibility Study appears to be a Base Case analysis and short circuit study only without including contingency analysis. CA ISO believes all power flow analysis should consist of normal and contingency conditions where contingency conditions consider single element outages as required by applicable reliability criteria.

7. Section 6.4 of the SGIP refers to a 45-day period for re-study if a higher queued project drops out of the queue. The CA ISO is unsure if this section is meant to apply only to the next generator in the queue or to all generators in the queue. Generators should be made aware of the fact that they will have to pay for additional studies, which are usually required, each time the queue changes.

8. Section 7.3: CA ISO believes all power flow analyses should consist of normal and contingency conditions where contingency conditions consider single element outages as required by applicable reliability criteria.

### **C. Specific Comments on the Interconnection Agreement**

1. Section 1.14: The term “Emergency Condition” is defined in Section 13.1 not 14.1. While the definition of emergency should be disassociated from economics, a “condition or situation that results from a lack of sufficient generating capacity to meet load requirements” is clearly a system emergency that will affect reliability. The phrase should be deleted from the qualification to the definition.

2. Section 1.28: The California ISO is a “Transmission Provider” and the SGIA Section 1.28 definition of “ISO” should be modified to read: “Independent System Operator (“ISO”) shall mean any Independent System Operator, serving as a Transmission Provider, to which a different Transmission Provider or Transmission Owner has transferred operational control of its transmission facilities, or any portion thereof, within the meaning of Order No. 888.”

3. Section 1.48 (IP Section 1.28): An ISO/RTO is considered a “Transmission Provider” and the SGIA Section 1.48 and SGIP Section 1.28 definitions of “RTO/ISO” should be modified to read: “RTO/ISO” shall mean any Regional Transmission

Organization or Independent System Operator, serving as a Transmission Provider, to which a different Transmission Provider or Transmission Owner has transferred operational control of its transmission facilities, or any portion thereof, within the meaning of Order No. 2000.”

4. Section 1.52: The definition should state, “whether such entity has transferred operational control of such transmission facilities to an **ISO** or RTO.”

5. Section 1.55: This section needs to acknowledge that the RTO or ISO may have Operational Control, not the TP/TO.

6. Section 4.3.1(a)(i): In cases when the Generator secures the “Generator Balancing Service” from a designated generator, such designated “balancing” generator must not only be deliverable in the Control Area in which the Generator requesting such service is located in the same Control Area, but that such “balancing” generator must be deliverable in the same, or operationally comparable, fashion (i.e. same Congestion Zone).

7. Section 4.3.1(e): The clauses should be removed which designates the applicable Control Area as a default provider of balancing services for the Generator. The Generator should not be allowed to enter Commercial Operations phase without having a clear contractual provision for balancing services which may be market based.

8. Section 4.1.2.2: This section places emphasis on the notion that the transmission system will be studied “at peak load” under a variety of stressed conditions to determine if the generator can deliver full output. It is essential that all studies consider off-peak operating periods with the generator at full output. During light load periods, the energy generated is not consumed locally and has to be transmitted over longer distances, possibly causing overloads that would not be determined by only studying on-peak periods. The CA ISO proposes the text be changed to read “at peak load and under a variety...”

9. Section 5.1.A: “Transmission Provider shall design, procure...” This should be designated as a Transmission Owner responsibility.

10. Section 5.1.A.ii: The NOPR states that Provider/Owner pays Generator .5% of the upgrade cost, for every day the Generator is delayed beyond the expected parallel date. It appears a single percentage penalty system does not really work. For example, if it's a \$20 million upgrade, then the penalty is significant and pressure is applied to finish on time. However, if the Generator is being held up by a \$20 thousand disconnect switch, then the incentive may be insufficient.

11. Section 5.2: A periodic, and/or as needed, tuning of Power System Stabilizers needs to be addressed in the NOPR process. The NOPR's current wording should be revised to read as follows: “The Generator shall procure, install, maintain and operate power system stabilizers in accordance with guidelines and procedures established by local regional councils such as WECC.” This section should be moved, probably near Section 9.7. The section should also be rewritten to include: “...if and as required by applicable reliability standards or studies as prescribed by the Control Area, Transmission Owner, or Transmission Operator.”

12. Section 5.6: This section should also reference Article 25 and state: “The roles and process for the continued exchange of information pertaining to the Generator Facility, the Interconnection Facilities, and the Transmission Network/Upgrades are further outlined in Article 25.”

13. Section 5.7: This section should be rewritten to read: “If any of the ...Network Upgrades are not reasonably expected to be completed prior to the **Initial Synchronization Date** of the Facility, the Transmission Operator shall at the expense of the

Generator perform operating studies on a timely basis to determine the extent to which the Facility...may operate prior to the completion..." If operating studies are needed to substitute for a forthcoming upgrade, these studies should be conducted automatically, not at the request of the Generator. All study costs are billable to the generator.

14. Section 5.12 & 5.13: The sections on "Early Construction" and "Suspension" were retained, but the proposed rule has dropped the TO's ANOPR Section IA discussion of "Milestones." All three topics merit their own section and discussion. A section regarding "Milestones" should be inserted between 5.13 and 5.14 to read as follows: "In the event the Generator fails to make reasonable progress toward meeting the schedule for placing the Facility in operation as set forth in Appendix B of this Agreement such that Generator will not meet the construction completion date set forth in Appendix B, (i) Generator shall inform *[Transmission Provider/Transmission Owner]* as soon as possible that any expected delays in the milestone date of construction completion in Appendix B and (ii) *[Transmission Provider/Transmission Owner]* shall reasonably extend the milestone date for construction completion in Appendix B for good cause shown by Generator, including delays that Generator did not cause and could not have remedied through Reasonable Efforts, provided, however, that any such extension will not be granted to the effect it would adversely affect the *[Transmission Provider/Transmission Owner]*'s obligations to meet commitments under other interconnection and operating agreements. Notwithstanding the foregoing, in no event shall a Generator's Initial Synchronization Date be extended for more than eighteen (18) months."

15. Article 7: "Metering" states that the "Transmission Provider shall install Metering Equipment at the Point of Interconnection...." To avoid potential misunderstanding,

this phrase should be changed to the "Transmission Provider shall install or have installed, Metering Equipment, at Generator's cost, at the Point of Interconnection..." Article 7 requires metering at the "Point of Interconnection", defined as "the point, set forth in Appendix A (which is blank) at which the Generator Interconnection Facilities connect to the Transmission Provider's Transmission Interconnection Facilities", which sounds like metering net of on-site or over-the-fence load. In light of the applicable WECC requirements discussed above, this should require gross, or at least no less than net of auxiliary plant load metering.

16. Section 9.2: This provision states that a generator has the "right to designate a different control area" and the "Generator to operate the Facility in accordance with the requirements of the Control Area of which it is a part...". In considering reliable system operations, the Control Area cannot be one of choice; rather it must be the Control Area in which the generating unit is electrically connected. Therefore, the generator should be deemed to be located in the Control Area in which the generator's Point of Interconnection is located. Any other provisions should be arranged separately between the generator, the Control Area in which it is electrically located, and the Control Area to which the generator would be dynamically scheduled. This will ensure the Generator has acquired physical transmission capacity to the Control Area of choice. However, the NOPR states that after the initial Synchronization Date, Generator has the right to designate a different Control Area. Presumably, existing generators will also be allowed to designate a different Control Area. This practice could result in serious congestion issues across interconnection ties. Would the Generator be required to procure Firm Exports in order to export energy from the Control Area to which the Generator is connected? Allowing generators to have the ability, at their whim, to switch Control Areas presents a great number of complex and quite significant operational

concerns. If a Generator is within the electrically metered boundaries of a WECC and NERC approved Control Area, how can it be somewhere else simply by deciding it wants to switch? Regardless of the location of the Generator “on paper”, anything the Generator does will impact the Control Area in which it is physically and electrically situated. The CA ISO questions the need for this section and proposes that it be deleted. In addition to the potential complications in congestion management, this provision may lead to a dangerous overlap and possibly competing operation instructions/orders issued to such “remote control area” Generators. One could imagine a situation where the Transmission Provider (and/or the host Control Area) requests from a Generator the maximum reactive power (MVAR) output for local area reliability, while at the same time the applicable (remote) control area requests maximum real power output (MW). Consider the situation of mitigation of thermal overloads of local transmission where requests by the Transmission Provider to back down generation may be contradicted by a remote control area’s request for maximum power. The proposed “remote control area” concept is a very dangerous “standard” option to offer to all of the market-based generators. Changes in control area designations should be granted on a case-by-case basis only, following serious research and investigation of the operating ramifications of such arrangements.

17. Section 9.3: This provision states that a generator does not have to comply with operating instructions that would have a material adverse impact on the safe and reliable operation of the generator’s facility. This standard is inconsistent with that approved in the CA ISO Tariff. In its October 1997 Order, the Commission concluded:

We find that the requirement that participants comply with all ISO orders except those that would result in impairment to public health or safety to be reasonable. With regard to intervenor concerns about potential damage to their facilities, we note that the ISO



will follow good utility practice in operating the system and will comply with all NERC, WSCC and other reliability criteria.

*Pacific Gas & Electric Company, et al.*, 81 FERC ¶ 61,122, 61,456 (1997).

18. Section 9.5: Notification/communication with the Control Area Operator immediately prior to and after synchronizing or paralleling to the system and separating from the system is completely ignored. The CA ISO cannot emphasize enough the need for a generator to communicate with the Control Area Operator in the above manner. The parallel and separation of a generator has a potential impact not only on the Control Area, but also on the entire interconnected system.

19. Section 9.6.1: The proposed rule states the “Generator shall design the Facility to maintain a composite power delivery at continuous rated power output at the Point of Interconnection at a power factor within the range of 0.97 leading to 0.95 lagging, unless...” CA ISO recommends that this range be changed to 0.95 leading to 0.9 lagging. Currently, generators within the CA ISO Control Area are required to operate within 0.95 leading to 0.9 lagging. Establishing a more narrow range, as proposed, would result in the CA ISO having to establish a set of criteria different from the NOPR which would certainly be challenged. It should be noted that many pockets within the CA ISO Control Area are VAR limited and establishing a more restricted reactive power factor range could significantly limit Operating Transfer Limits. Alternatively, the CA ISO strongly supports a provision giving the Transmission Provider (Control Area operator) discretion to change (widen) the Power Factor range as necessary for reliable operation.

20. Section 9.7.1.2: Compensating a Generator for rescheduling its scheduled maintenance due to the Transmission Provider's (Control Area Operator's) reliability

considerations is unreasonable. This issue should be resolved by deferring to the RTO/ISO outage coordination provisions.

21. Section 9.7.3: It should be noted that this is a potentially problematic approach. Equipment warranties and limits should not trump Control Area requirements. A Generator is responsible to choose and install a unit which meets the control area's reliability standards. Therefore, it is proposed to delete the text: "to the extent allowed by equipment limitations or warranties." Also, this section seems out-of-place. It may be better to include it as a subsection under Section 9.7.4 System Protection and Other Control Requirements.

22. Section 11.6.1: CA ISO is concerned whether it is feasible to measure and charge for all actions during emergencies. Further, it should be explicit that all additional metering and monitoring equipment must be at the generators' expense.

23. Section 13.6: The language in this section implies that a generator may remove a unit from service to avoid even the slightest consequential damage. For example, damage may result from continuing to operate a unit with a boiler tube leak until the Transmission Operator can secure alternative resources to avoid dropping load. It is inappropriate to place this authority in the hands of generators because they are unaware of real-time system conditions and all operations that impact the reliability of the electric system. Therefore, a wording change is appropriate to distinguish minor damage from catastrophic damages, while maintaining the right of the generator to protect plant and public safety. The CA ISO suggests, at a minimum, changing the language in item (iii) to limit or prevent "major and material" damage.

24. Article 22: This section should allow the RTO/ISO access to operational, performance, & maintenance data.

25. Article 23: Retitle as “Environmental Notification.” The existing text should be retained as 23.1 “Environmental Releases”. A subsequent section also needs to be added, 23.2 “Environmental Limitations”. This section should read as follows: “The Generator will notify the Transmission Owner and Transmission Operator at the time of the Commercial Operation date and annually thereafter of any and all known environmental limitations which affect the capacity or operation of the Generating Facility. The Generator will also annually notify the Transmission Owner/Operator of known environmental restrictions applicable over the next 5 years, including impending changes in those restrictions (for example, diminishing NOx limits, changes in minimum water flows, expanding windows of cooling water limitations), and the Generator’s intended plan to comply with these future restrictive standards.”

26. Section 24.2: This Section is somewhat redundant to, but more specific than, Sections 5.5-5.6. Section 5.5 says either party can request status reports of the other at any time, but Section 24.2 requires the Transmission Owner to provide monthly status reports. However, the progress of the generator is equally important to the Transmission Owner and Transmission Provider. Therefore, a section is needed whereby the Generator provides regular status updates to both the Transmission Owner and System Operator.

27. Section 24.3: The CA ISO suggests that the following language be added: “On a monthly basis, Generator shall provide Transmission Provider and System Operator, a status report on the construction of the generator project and interconnection facilities.” Add to text in the second paragraph, “If Generator’s data is materially different than what was originally provided...then Transmission Owner...will conduct appropriate studies at Generator’s expense to determine the impact...”

28. Article 29: This committee is not needed. The committee duties will be discharged as part of normal business. In addition, the concept of an Operating Committee may represent new roles and functions that were not previously envisioned by the RTO/ISO or TP tariff. What would an Operating Committee look like for Generators connected to one Transmission Provider's system, but belonging to another Control Area?

29. Note: Appendices are referenced which are blank. Many of the articles refer extensively to appendices that contain nothing. CA ISO must be given the opportunity to evaluate and comment on the language in these referenced appendices.

### **III. Concluding Remarks**

The CA ISO thanks the Commission for the opportunity to submit comments on the standardized interconnection documents. As this process moves forward, the Commission must ensure that the policies and price signals established in this proceeding are complementary to the policies and price signals inherent in the SMD. Absent such integration, the Commission's objectives in both proceedings may be compromised. Moreover, the interconnection procedures and agreements must be consistent with and integrated into existing and evolving regional transmission tariffs and market designs. In addition, the Commission must recognize that responsibilities should be divided between transmission owners and the RTO/ISO in a manner that promotes non-discriminatory, efficient, and expeditious interconnection of new generation.

Respectfully submitted,

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Philip D. Pettingill  
California Independent System  
Operator Corporation  
Folsom, California 95630

Dated: June 19, 2002



June 19, 2002

The Honorable Magalie Roman Salas  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

**Re: Comments on Standardization of Generator Interconnection Agreements and  
Procedures in Docket No. RM02-1-000**

Dear Secretary Salas:

Enclosed, in response to the Commission's Notice of Proposed Rulemaking issued April 24, 2002, please find the Comments of the California Independent System Operator Corporation. We apologize for the fact that these comments had to be filed beyond the deadline due to the unavailability of certain key personnel whose comments were critical to this NOPR. As always, we thank the Commission for the opportunity to present these comments.

This document is being filed electronically to expedite the provision of this information to the Commission. Thank you for your assistance.

Respectfully submitted,

Gene L. Waas  
An Attorney for the  
California Independent System  
Operator Corporation  
(916) 608-7049

## **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the Comments on Standardization of Generator Interconnection Agreements and Procedures upon each person designated on the official service list compiled by the Secretary in the above-captioned dockets.

Dated at Folsom, California, on this 19th day of June, 2002.

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Gene L. Waas  
Counsel for The California Independent  
System Operator Corporation