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January 18, 2005

Ms. Magalie Roman Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

**RE: Large Generator Interconnection Procedures of the California
Independent System Operator Corporation
Docket Nos. ER04-445-____**

Dear Secretary Salas:

In compliance with the Federal Energy Regulatory Commission's ("Commission" or "FERC") June 2, 2005 Final Rule on Interconnection for Wind Energy, Order No. 661, 111 FERC ¶ 61,353 (2005) ("Order No. 661"), its December 12, 2005 Order on Rehearing and Clarification of Order No. 661, Order No. 661-A, 113 FERC ¶ 61,254 (2005) ("Order No. 661-A"), and its December 22, 2005 "Notice Extending Compliance Date," the California Independent System Operator Corporation ("ISO") hereby submits six copies of its long-term Standard Large Generator Interconnection Procedures ("LGIP"), incorporating a new appendix relating to procedures for interconnecting wind generators.¹ Concurrent with this filing, the ISO is also filing a version of the Standard Large Generator Interconnection Agreement ("LGIA") in conformance with Order Nos. 661 and 661-A. The ISO is also tendering two copies to be time and date stamped and returned to our courier.

¹ Capitalized terms that are not otherwise defined are defined in the Master Definitions Supplement, Appendix A to the ISO Tariff ("ISO Master Definitions Supplement").

I. BACKGROUND

A. Order No. 661

On June 2, 2005, the Commission issued Order No. 661, in which it required that all public utilities that own, control, or operate facilities for transmitting electric energy in interstate commerce to append to their Large Generator Interconnection Procedures (LGIPs) and Large Generator Interconnection Agreements (LGIAs) a new appendix setting forth standard procedures and technical requirements with respect to the interconnection of wind generation facilities.² The Commission explained that the new procedures and technical requirements were necessary because some of the technical requirements of the LGIA were inappropriate for non-synchronous technologies, such as wind generators, and therefore, Order No. 661 benefits customers by removing unnecessary obstacles to further development of wind generating resources while ensuring that reliability is protected.

Order No. 661 addressed three primary issues with respect to the technical requirements relating to the interconnection of wind generating plants: (1) low voltage ride-through capability, (2) maintenance of a particular power factor range, and (3) supervisory control and data acquisition ("SCADA") capability.

The issue of low voltage ride-through capability concerns the ability of wind generating plants to remain on-line during periods of sudden voltage decrease on the transmission system. In the NOPR that preceded the issuance of Order No. 661, the Commission proposed to require that wind plants seeking to interconnect to the transmission system demonstrate low voltage ride-through capability, unless waived by a transmission provider on a comparable and not unduly discriminatory basis for all wind plants. Specifically, the NOPR proposed that wind generating plants would be required to demonstrate the ability to remain on-line during voltage disturbances up to the time periods and associated voltage levels set forth therein.

In Order No. 661, the Commission adopted the low voltage ride-through standard proposed in the NOPR, but concluded that this standard would not be required unless the Interconnection System Impact Study shows that it is needed. Specifically, under Order No. 661, a wind plant is required to satisfy the low voltage ride-through standard if the transmission provider shows, through the Interconnection System Impact Study, that

² The Commission set the effective date of Order No. 661 for 60 days after publication in the Federal Register, which was made on June 16, 2005. However, the Commission adopted a transition period for application of the standard technical requirements for wind generators. Specifically, the Commission concluded that the standard technical requirements would apply only to LGIAs signed, filed with the Commission in unexecuted form, or filed as a non-conforming agreement, on or after January 1, 2006, or the date six months after publication of the Final Rule in the Federal Register, whichever is later.

such capability is required to ensure safety or reliability. The Commission reasoned that establishing the low-voltage ride through standard in this fashion shows that it is necessary to maintain the safety and reliability of the grid, provides certainty to wind plant developers that their interconnection to the grid will not be frustrated, and limits opportunities for undue discrimination.

The second issue addressed in Order No. 661 concerns the power factor range that wind generators must operate within. In the NOPR, the Commission noted that although transmission providers did not require wind generators to have reactive power capability until recently, because of the larger size of many of the wind plants being built and the increased presence of wind energy on various transmission systems, the Commission was proposing to require wind plants to operate within a specified power factor range to help balance the reactive power needs of the transmission system. Specifically, the NOPR proposed to require that large wind plants maintain a power factor within the range of 0.95 leading to 0.95 lagging (as required by Order No. 2003), to be measured at the high voltage side of the wind plant substation transformer. The Commission also proposed, in the NOPR, to allow wind plants flexibility in how they meet the power factor requirement; for example, using either power electronics designed to supply this level of reactive capability, fixed and switched capacitors if agreed to by the transmission provider, or a combination of the two. Additionally, the NOPR proposed to allow the transmission provider to waive the power factor requirement for wind plants where it is not needed at that location or for a generating facility of that size, provided that such waiver is not unduly discriminatory (that is, is offered on a comparable basis to similarly situated wind plants).

In Order No. 661, the Commission adopted the power factor range of 0.95 leading to 0.95 lagging for large wind generating plants, but stated that wind generating plants would be required to maintain this power factor range only if the transmission provider shows, through the Interconnection System Impact Study, that such capability is required of that plant to ensure safety or reliability. The Commission explained that this decision would provide assurance to wind plant developers that their interconnection to the grid will not be frustrated or face uncertainty due to a lack of standards, and thus will limit opportunities for undue discrimination, remove unnecessary obstacles to the increased growth of wind generation, and ensure that safety and reliability is protected. The Commission also adopted the NOPR proposal to measure the power factor at the Point of Interconnection.

Finally, with respect to SCADA capability, the Commission, in the NOPR, proposed to require that a large wind plant seeking to interconnect to the transmission grid possess SCADA capability to transmit data and receive instructions from the transmission provider. Additionally, the Commission proposed requiring that the transmission provider and the wind plant owner determine the type of SCADA information and equipment that is essential for the proposed wind plant, taking into account the size of the plant, its characteristics, its location, and its importance in

maintaining generation resource adequacy and transmission system reliability. In Order No. 661, the Commission adopted the SCADA requirement proposed in the NOPR, with the clarification that a wind plant is only required to have the capability to receive instructions, and that nothing in Order No. 661 authorizes a transmission provider to control a wind plant; any such authorization would be subject to separate negotiation and agreement between the Interconnection Customer and the transmission provider.

B. Order No. 661-A

On August 4, 2005, a number of parties filed requests for rehearing and/or clarification of Order No. 661. Additionally, the North American Electric Reliability Council ("NERC") and the American Wind Energy Association ("AWEA") filed a request for a 60-day extension to the effective date of Order No. 661 to October 14, 2005, in order to allow them to engage in discussions to resolve NERC's concern regarding the low voltage ride-through standard. On August 5, 2005, the Commission granted this request, and required NERC and AWEA to submit a final report on their discussions by September 14, 2005. Pursuant to a request from NERC and AWEA, the Commission thereafter extended this date to September 19, 2005.

On December 12, 2005, the Commission issued its Order on Rehearing and Clarification of Order No. 661, Order No. 661-A. Therein, the Commission addressed the joint recommendations of NERC and AWEA, as well as the requests for rehearing and/or clarification filed by parties on August 4, 2005.

With respect to the low voltage ride-through provisions adopted in Order No. 661, the Commission granted rehearing and adopted the joint recommendations of NERC and AWEA. These recommendations consisted of a new low-voltage ride through standard, and a limitation on the variations to the standard as permitted in Order No. 661 pursuant to the "consistent with or superior to" or independent entity variation standards. Specifically, NERC and AWEA recommended that variations to their proposed low voltage ride-through provisions be permitted on an interconnection-wide basis only, reasoning that such a limitation is appropriate because the provisions are intended to satisfy a NERC reliability standard, and because wind generators could incur significant additional costs if they had to meet many different standards.

With regard to the power factor standard for wind generators, the Commission concluded that it would not modify Order No. 661 to require wind plants to meet the power factor standard without a showing by the transmission provider, through the Interconnection System Impact Study, that it is needed for safety or reliability. The Commission also declined to clarify that wind generators would be required to meet a wider power factor range than 0.95 leading to 0.95 lagging if a wider range was universally applied by a particular transmission provider. However, the Commission noted that if the Interconnection System Impact Study shows the need for a power factor range wider than +/- 0.95 for safety or reliability, the transmission provider must

file a non-conforming agreement, as Order No. 2003 permits, and the Commission will consider these non-conforming agreements on a case by case basis. Moreover, the Commission noted that if a transmission provider has a different power factor range in its LGIA and wishes to apply that same range in Appendix G, it may seek a variation from the Commission under the variation standards approved in the Final Rule.

Finally, with respect to the date that entities would be required to make compliance filings pursuant to Order No. 661-A, the Commission noted that it had already extended to December 30, 2005 the date by which all public utilities that own, control, or operate transmission facilities in interstate commerce must adopt the wind interconnection appendix. Also, the Commission stated that public utilities who had already filed the wind generation appendix, pursuant to Order No. 661, as amendments to the LGIPs and LGIAs must file, by December 30, 2005, the revisions to the appendix made in Order No. 661-A.

C. CAISO and PTO Request for Extension

On December 19, 2005, the ISO and SCE filed separate requests for an extension of time from December 30, 2005 to January 18, 2005 to file a revised LGIP and LGIA in accordance with Orders No. 661 and 661-A. On December 20, 2005, SDG&E filed a motion asking for an identical extension. On December 22, 2005, the Commission issued an order granting these motions.

II. CONTENTS OF FILING

This filing comprises:

This Transmittal Letter

Attachment A LGIP Tariff Language Blacklined Against LGIP filed on November 1, 2005

Attachment B LGIP Tariff Sheets Clean

Attachment C Document Displaying ISO Proposed Modifications to the Commission's Pro Forma LGIP Wind Appendix

III. COMMUNICATIONS

Correspondence and other communications regarding this filing should be directed to:

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IV. DESCRIPTION OF THE FILING

A. Structure of the Filing

As described above, the instant filing is submitted in compliance with Order Nos. 661 and 661-A, which require all public utilities to amend their LGIAs and LGIPs to include a new appendix addressing procedures and technical requirements for the interconnection of wind generating facilities.

The ISO has used the LGIP that it filed on November 1, 2005, as the baseline against which the changes proposed herein are reflected. Included as Attachment A are blackline sheets showing each proposed change from the LGIP filed on November 1, 2005.³ The ISO is also including, as Attachment C, a document which shows the ISO's proposed modifications to the Commission's *pro forma* LGIP wind appendix.

³ The Commission has yet to act on the ISO's November 1, 2005 LGIP filing.

B. Proposed Changes to the Commission's Pro Forma LGIP Wind Generation Appendix

The ISO is proposing a number of modifications to the Commission's *pro forma* LGIP appendix addressing wind generators, as set forth in Orders Nos. 661 and 661-A. Most of these revisions are minor in nature, made in order to conform the Commission's *pro forma* appendix to the ISO-specific LGIP, the most recent version of which was filed with the Commission on November 1, 2005. For instance, ISO is proposing to change the designation of the LGIP wind generation appendix from Appendix 7 of the LGIP to Appendix 2, consistent with the numbering of the appendices in the ISO's November 1, 2005 LGIP filing. The ISO is also proposing several other changes in order to conform the terminology in the Commission's *pro forma* LGIP wind appendix with the terminology used throughout the remainder of the ISO-specific LGIP. Because none of these proposed changes is substantive in nature, and these changes will harmonize the Commission's *pro forma* wind appendix with the ISO's LGIP, the ISO submits that these modifications are just and reasonable, and should be adopted.

In addition, the ISO is proposing to add the following language to the second paragraph of Section A of the Commission's *pro forma* LGIP wind appendix:

No later than six months after submitting an Interconnection Request completed in this manner, or accompanying the Interconnection Customer's return of an executed Interconnection Study agreement, the wind plant Interconnection Customer must submit completed detailed electrical design specifications and other data (including collector system layout data) needed

This modification is intended to make clear that the ISO will commence Interconnection Studies for wind generators, as it does with all other generators, upon receipt of complete technical data. Although the Commission has provided wind generators a six month period in which to submit complete technical data, the LGIP provides that an Interconnection Customer must provide complete technical data upon the execution of an Interconnection Study agreement.⁴ The ISO does not believe that the Commission intended to exempt wind generators from this requirement. The ISO's proposed modification to this section merely clarifies what is already required of wind generators under the LGIP. Therefore, this proposed modification meets both the independent entity variation standard and the "consistent with or superior to" standard, and should be accepted.

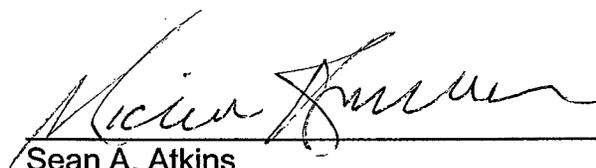
⁴ See Sections 6.1 and 7.2 of the ISO's LGIP, as filed on November 1, 2005.

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January 18, 2006
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IV. CONCLUSION

For the reasons set forth above, the ISO respectfully requests that the Commission accept its *pro forma* LGIP, revised in accordance with the Commission's Order Nos. 661 and 661-A.

Respectfully submitted,



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ATTACHMENT A

**Standard Large Generator
Interconnection Procedures (LGIP)**

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APPENDIX 2 to LGIP
INTERCONNECTION PROCEDURES FOR A WIND GENERATING PLANT

Appendix 2 sets forth procedures specific to a wind generating plant. All other requirements of this LGIP continue to apply to wind generating plant interconnections.

A. Special Procedures Applicable to Wind Generators

The wind plant Interconnection Customer, in completing the Interconnection Request required by section 3.1 of this LGIP, may provide to the ISO a set of preliminary electrical design specifications depicting the wind plant as a single equivalent generator. Upon satisfying these and other applicable Interconnection Request conditions, the wind plant may enter the queue and receive the Base Case data as provided for in this LGIP.

No later than six months after submitting an Interconnection Request completed in this manner, or accompanying the Interconnection Customer's return of an executed Interconnection Study agreement, the wind plant Interconnection Customer must submit completed detailed electrical design specifications and other data (including collector system layout data) needed to allow the ISO to complete the Interconnection Study.

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APPENDIX 2 TO LGIP

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No later than six months after submitting an Interconnection Request completed in this manner, or accompanying the Interconnection Customer's return of an executed Interconnection Study agreement, the wind plant Interconnection Customer must submit completed detailed electrical design specifications and other data (including collector system layout data) needed to allow the ISO to complete the Interconnection Study.

ATTACHMENT C

**BLACKLINE SHOWING ISO PROPOSED MODIFICATIONS TO
FERC PRO FORMA LGIP WIND APPENDIX**

**APPENDIX ~~72~~ to LGIP
INTERCONNECTION PROCEDURES FOR A WIND GENERATING PLANT**

Appendix ~~62~~ sets forth procedures specific to a wind generating plant. All other requirements of this LGIP continue to apply to wind generating plant interconnections.

A. Special Procedures Applicable to Wind Generators

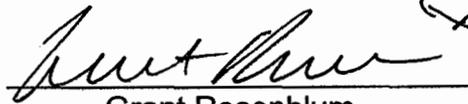
The wind plant Interconnection Customer, in completing the Interconnection Request required by section 3.31 of this LGIP, may provide to the ~~Transmission Provider ISO~~ a set of preliminary electrical design specifications depicting the wind plant as a single equivalent generator. Upon satisfying these and other applicable Interconnection Request conditions, the wind plant may enter the queue and receive the ~~bBase eCase~~ data as provided for in this LGIP.

No later than six months after submitting an Interconnection Request completed in this manner, or accompanying the Interconnection Customer's return of an executed Interconnection Study agreement, the wind plant Interconnection Customer must submit completed detailed electrical design specifications and other data (including collector system layout data) needed to allow the ~~Transmission Provider ISO~~ to complete the Interconnection System Impact Study.

Certificate of Service

I hereby certify that I have this day served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 18th day of January, 2006 at Folsom in the State of California.



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NRK