Comments of Southern California Edison
On
CAISO Draft Tariff Language (Interconnection Requirements Initiative)

On May 25, 2010, the CAISO posted draft tariff language affecting Section 8.2.3.3, Appendix A, Appendix U, Appendix V, and Appendix H. On May 26, 2010, the CAISO posted draft tariff language affecting Appendix Z. Southern California Edison (SCE) appreciates the opportunity to submit these comments on this CAISO draft tariff language to implement revisions to the CAISO interconnection requirements for large generating facilities ("draft tariff language"). Given the short timeframe to review the extensive changes proposed in the draft tariff language, SCE's initial comments primarily focus on Appendix A and Attachment A to LGIP Appendix 1. SCE reserves the ability to submit additional comments as SCE continues its review.

1. **Definition of "Asynchronous Generating Facility", Appendix A – Master Definitions Supplement**

   SCE understands that the intended use of the term "Asynchronous Generating Facility" is to apply to all generating facilities other than conventional synchronous generators, including, for example, full converted DC-AC generators such as PV. However, conventional use of the term "asynchronous" refers to electric machines that rotate at non-synchronous speed (i.e., slip). The conventional use of the term "asynchronous" does not generally include DC-AC converted facilities such as PV and this may lead to confusion.

   The suggested definition of "Asynchronous Generating Facility" in Appendix A includes generating units other than a "synchronous Generating Unit" that "produces 60 Hz (nominal) alternating current." It is not entirely clear whether this definition includes PV generators since they produce at DC and then use inverters to convert from DC to AC. This creates a new defined term "Asynchronous Generating Facility" but defines it relative to a term "synchronous Generating Unit" which itself is not defined in the tariff.

   SCE suggests that if the term "Asynchronous Generating Facility" is defined as anything other than a "Synchronous Generating Facility", then the latter term should also be a defined term in the tariff. SCE suggests that both terms should be consistently used throughout the tariff language in a manner that avoids such ambiguity. Even with this, it may be useful for the definition of "Asynchronous Generating Facility" to explicitly include generators that generate at DC and then convert to AC at 60 Hz such as PV generating facilities to avoid confusion by use of the term "asynchronous" that has a more narrow conventional meaning than intended here.

2. **Item 7 (Generator and Associated Equipment—Dynamic Models) under Attachment A to LGIP Appendix 1 Interconnection Request**

   The CAISO proposed language is divided into two subsections: one applicable to "Synchronous Generators" and the other applicable to "Asynchronous". SCE suggests that the two sections should both refer to defined terms "Synchronous Generating Facility" and "Asynchronous Generating Facility" to avoid ambiguity (see item 1).

   Also, the links to the GE PSLF program manual are no longer valid. It is SCE's understanding that the GE PSLF program manual is no longer available for general download at the GE website. Developers who are not licensed PSLF users but wish to access the GE PSLF program manual need to contact GE directly. SCE suggests that the language in the tariff Attachment A, section 7 be updated accordingly. CAISO may need to work directly with GE to develop the appropriate reference to the GE PSLF manual. (As an aside, SCE also notes that there is a link to "PSLF library models" on the CAISO website. These models are from the GE PSLF software in 2002 and are generally not consistent with the latest approved GE PSLF software release. SCE has found more than once that developers provide models for their project that are no longer supported in PSLF even though those models were obtained from the 2002 models list on the CAISO website. It may be more appropriate for the CAISO website to provide a link to the latest WECC "approved models list".)

   Finally, the allowance for developers of Asynchronous Generating Facilities to use custom models if standard models are not available should include clarification that the developer will need to work with WECC to develop such models and that it will be the interconnection customer's responsibility to provide a WECC approved model prior to energization of the facility.

3. **Item 9 (Generator Short Circuit Data) under Attachment A to LGIP Appendix 1 Interconnection Request**

   Item 9 specifies data that should provided "for each generator" however this data is more typical of synchronous generating facilities. The data requested does not necessarily apply to Asynchronous Generating Facilities. An example of this is a PV facility where the facility contribution to short circuit duty is dominated by the characteristics of the inverter.

   Similar to our comments regarding Item 7 above, Item 9 should have a subdivision applicable to "Synchronous Generating Facilities" (i.e. the existing tariff language) and a subdivision applicable to "Asynchronous Generating Facilities". The latter section should direct developers to provide sufficient technical data related to the short circuit characteristics of the individual generating units and/or the aggregate Generating Facility.

4. **Performance requirements for projects connecting to non-CAISO facilities**

    SCE suggests that the tariff clarify the interconnection performance requirements (e.g., voltage regulation, power factor correction, LVRT, etc.) at the point of delivery to CAISO (or, for example, at the generator terminals or high side of GSU) grid for projects that do not physically connect to a point on the CAISO grid but deliver (possibly with other existing or queued projects) to the CAISO grid via non-CAISO radial transmission facilities.