Attachment C

Summary Table of Recommendations

Requirement	What is in place today?	What is proposed?
Power factor requirement	Two standards: • All generators, _except wind_, must meet 0.9 lag/0.95 lead, measured at the generator terminals. • Wind generators must meet 0.95 lag/0.95 lead, measured at point of interconnection , _but only if_ explicitly required by a system impact study. • Does not prescribe the means to satisfy the standard and allows for developer to adopt least cost solution, including the use of auxiliary equipment, such as switched capacitors or static VAR compensators.	Keep two standards: • Maintain existing power factor requirement of 0.9 lag/0.95 lead at generator terminals for all <u>synchronous</u> generators, including most solar thermal technologies. • Extend wind standard of 0.95 lag/lead, measured at the point of interconnection, to all <u>asynchronous</u> generators, including wind generators, solar PV, Stirling engines. • Continues to allow for least cost solutions. • Establish the asynchronous power factor requirement as a default, rather than on a study-by-study basis.
Voltage Regulation	• Article 9.6.2 of LGIA establishes the requirement for <u>all</u> generators to maintain voltage schedules.	• Clarify the existing voltage requirement for all new variable energy resources generators to install an automatic voltage control system to regulate voltage at the point of interconnection, within the reactive capability of the generator facility.
Voltage and Frequency Ride-through	• Voltage - only explicit standard applies to wind through FERC Order No. 661-A • Frequency – WECC criteria set forth in Under-frequency Load Shedding Relay Application Guide.	• Extend Order No. 661-A voltage ride-through requirement to _all new generators._ • Clarify requirement for all generators to comply with the existing WECC frequency ride-through criteria.
Generator Power Management	• Active Power Management - tariff sections 4.6.1.1, 7.1.3, 7.6.1, and 7.7.2.3 require all generating facilities with Participating Generator Agreements to operate such that the ISO can control their output under both normal and emergency conditions. • Ramp Rate Limits and Control – Currently, there is no reference to the need for ramp rate limit/control in the tariff. Conventional fossil fuel source machines typically have "gradual" ramp rates, whereas wind and solar resources	• Require all variable energy generators to install control systems that provide for the ability to reduce output to a targeted set-point. • Require ramp rates controls that allow for a range of 5% and 20% of rated capacity per minute, with a default setting of 10%, subject to availability of renewable fuel resource (e.g., wind or sunlight). • Extend WECC MORC 5% droop criteria for over frequency only to all variable energy generators.

Requirement	What is in place today?	What is proposed?
	exhibit "steep" ramp rates. • Frequency Response – WECC MORC criteria require all synchronous machines to design a 5% droop setting to provide over-frequency & under-frequency governor response. Currently there is no requirement for VERs to provide any frequency response.	
Power System Stabilizers Requirement	• Article 5.4 of ISO LGIA requires power system stabilizers for all generators except induction type wind plants.	• Create an exception for all asynchronous generators, including induction type wind plants and asynchronous solar plants.
Use of Standard Models	• None	• Developers requesting interconnection must use WECC approved standard models when available.