

IOS PERFORMANCE STANDARDS

Ancillary Services Content Group

IOS	Technical Specs	Performance audits	Penalties	
			Dispatched Instructions	Periodic Testing
REGULATION	<p>Must be capable of responding to direct digital control signals from RTO's AGC in upward and downward directions.</p> <p>Real-time output of Generation must be capable of being monitored by the RTO's EMS system. Generator's AGC status must be observable by RTO's telemetry in real-time. Generating Unit must be capable of delivering full amount of regulating capacity offered to the RTO within ten minutes(Note need to confirm the 10-minutes)</p> <p>Minimum amount of Regulation is in one Mw increments.</p>	<p>The RTO shall audit the Generating Unit's response to the RTO's AGC commands around midpoint of the Generating Unit's regulating range and within the Generating Unit's rated Mw-minute capability over the range of Regulation capacity schedule for the Settlement period.</p>	<p>If a Generating Unit, Curtable Demand or System Resource is unavailable or incapable of responding to a Dispatch Instruction, or fails to respond to a Dispatch Instruction in accordance with its terms, the Generating Unit, curtable Demand or System Resource: (a) shall be declared and labeled as non-conforming to the ISO instructions; (b) cannot set the Hourly Ex Post Price; and the SC for the Participating Generator, owner or operator of the Curtable Demand or System Resource shall pay to the ISO the difference between the Generating Unit's, Curtable Demand's or System Resource's instructed and actual output (or Demand) at the Ex Post Price in accordance with Section xxxxx. This applies whether or not the Ancillary Service concerned are contracted or self provided.</p> <p>The ISO will develop additional mechanisms to deter Generating Units, Curtable Demand and System Resources from failing to perform according to Dispatch Instructions. For example reduction in payments to SC, or suspension of the SC's Ancillary Service Certificate for the Generating Unit, Curtable Demand or System Resource concerned.</p> <p>THE ABOVE IS TAKEN FROM THE CAISO TARIFF AND IS APPLICABLE TO ALL IOS/AS</p>	<p>If an IOS (Ancillary Service) resource fails a performance audit, the resource's certification shall be reduced to the quantity of Ancillary Service the resource actually provided during the performance audit. This restriction shall apply to all future sales an/or self provision of Ancillary Services from the resource until such time that the SC can demonstrate to the RTO that the resource is capable of delivering the previously certified amount of Ancillary Service. The SC that is responsible for an Ancillary Service resource that has failed a performance audit may also be subject to such financial penalties that are developed by the RTO, approved by the Commission and published in the Tariff. Any such penalties shall first be approved by the Board of Directors.</p> <p>The RTO shall maintain records for at least thirty-six months documenting all audits performed, the results of such audits, any penalties and sanctions that were imposed, dispensations or reductions in penalties and sanctions, and the reason for such dispensations or reductions.</p> <p>THE ABOVE IS TAKEN FROM THE D-STAR TARIFF AND IS APPLICABLE TO ALL IOS/AS</p>
LOAD FOLLOWING UP	<p>Load Following Up may be provided by that portion of a Generating Units capacity, beyond the Units scheduled operating point, that is capable of being loaded to the specified output level within 10-minutes and capable of operating at that level for at least one-hour.</p> <p>Load Following Up service may be provided to the RTO by designated Demand that is capable of being reduced within 10-minutes and capable of remaining at the reduced level for at least one-hour.</p> <p>Minimum amount of Load Following Up is in increments of one-MW</p>	<p>A Generating Unit that provides Load Following UP or Load Following Down shall be evaluated on its ability to respond to a Dispatch Instruction, start within the designated time frame, provide the amount of Load Following Up or Load Following Down capacity scheduled for the Settlement Period within ten-minutes of issue of the Dispatch Instruction, and sustain operation at this level for sufficient time to assure availability over the specified period.</p>		
LOAD FOLLOWING DOWN	<p>Same criteria as Load Following UP</p>	<p>(See Load Following Up)</p>		
SPINNING RESERVE	<p>Spinning Reserve is provided to the RTO by allowing the RTO to reserve and implement: the right to dispatch capacity from Generating Units, the right to call upon capacity associated with imports of firm generating capacity that is on-line and synchronized to the non-RTO Grid, or the right to recall non-firm energy exports.</p> <p>Spinning Reserve service may be provided by that portion of a Generating Units capacity that is unloaded, synchronized to the Grid, immediately responsive to the system frequency, capable of being ramped to a specified output level within ten-minutes and capable of operating at that level for at least one-hour.</p> <p>Spinning Reserve service may be provided to the RTO by designating: (I)imports of firm capacity that is on-line and synchronized to the non-RTO Grid, or (ii)non-firm energy exports.</p> <p>Minimum amount of Spinning Reserve service capacity that may be offered is in increments of one-Mw.</p> <p>Spinning Reserve service that is provided through firm capacity imports must acquire and schedule transmission (FTRs, RTRs, or NCRs)</p>	<p>A Generating Unit that provides Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, provide the amount of Spinning Reserve capacity scheduled for the current Settlement Period within ten-minutes of issue of the Dispatch Instruction, and respond to system frequency.</p> <p>An import that provides Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction and its ability to provide the amount of Spinning Reserve capacity scheduled for the current Settlement Period within ten-minutes of issue of the Dispatch Instruction.</p>		

<p>NON-SPINNING RESERVE</p>	<p>Non-spinning Reserve service may be provided by the portion of a Generating Units off-line capacity that is capable of being synchronized and ramped to a specific output level with 10-minutes and capable of operating at that output level for at least one-hour.</p> <p>Non-Spinning Reserve service may also be provided to the RTO by the portion of a Generating Units on-line capacity that is in excess of the Spinning Reserve requirements.</p> <p>Non-Spinning Reserve service may be provided to the RTO by Demand that is capable of being reduced within 10-minutes and capable of remaining at the reduced level for at least one-hour.</p> <p>Non-Spinning Reserve service may be provided to the RTO by designating: (i) firm capacity imports or (ii) non-firm exports, which can be called upon by the RTO in the event of an contingency.</p> <p>The minimum amount on Non-Spinning Reserve service is in one-Mw increments.</p> <p>Non-Spinning Reserve service provide by imports must acquire and schedule transmission rights (FTRs, RTRs, or NCRs)</p>	<p>A Generating Unit that provide Non-Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, and to provide the amount of Non-Spinning Reserve capacity scheduled for the current Settlement Period within ten-minutes.</p>
<p>REPLACEMENT RESERVE</p>	<p>Similar to the requirements for Spinning/Non-Spinning Reserve service.</p>	<p>(Need help here)</p>
<p>SUPPLEMENTAL ENERGY</p>	<p>Supplemental Energy service is provided to the RTO by allowing the RTO to change, in real-time the scheduled output or consumption levels of Generating Units or Dispatchable Demands. There are no technical requirements associated with the provision of Supplemental Energy service to the RTO in real-time, other than the capability to provide the amount of redispatch specified in the Supplemental Energy bid within 10-minutes of the RTO Dispatch Order.</p>	<p>(Need help here)</p>
<p>CONGESTION REDISPATCH</p>	<p>Congestion Redispatch is provided to the RTO by allowing the RTO to change during the Day-Ahead Scheduling Process and Schedule Adjustment Process, the scheduled output of consumption level of Generating Units and Demands.</p> <p>There are no technical requirements associated with the provision of Congestion Redispatch service.</p>	
<p>BLACK START</p>	<p>Black Start is provided to the RTO by making available generating capacity that may be used by the RTO to restore service to the Grid after a blackout.</p>	<p>The RTO shall audit the performance of a Generating Unit that provides Black Start service by analysis of meter data and other records to determine that the performance criteria related to the Black Start from that Black Start Generating Unit were met, based on periodic testing by the RTO for the current Settlement Period.</p>
<p>VOLTAGE SUPPORT</p>	<p>Each Generating Unit is required to provide Voltage Support to the RTO in accordance with the standards specified in Section D.6.7 (see D-STAR Tariff)</p> <p>Additional Voltage Support service may be provided by that portion of a Generating Unit's capacity that capable of being re-dispatched in 10-minutes, and capable of being operated at that output for at least one-hour.</p> <p>The minimum amount of Voltage Support service that may be offered to the RTO is in one MVAR increments.</p>	<p>A resource that provides Voltage Support shall be evaluated on its ability to provide reactive support over the stated power factor range of the resource, provide reactive power support within the prescribed time period, and demonstrate the effective function of automatic voltage control equipment for the Voltage Support under the control of the RTO for the current Settlement Period.</p>
<p>AREA CONTROL CENTER SUPPORT TO RTO WEST</p>	<p>Scheduling service that is provide by the RTO to SCs.</p> <p>There are no technical requirements associated with this service.</p>	<p>Not Applicable</p>