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| Principle  Number | 2 | Principle Title | Suite of Ancillary Service Products |
| Date Posted | | November 25, 2019 | |
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| Executive Summary | | This Key Principle focuses on the suite of Ancillary Service (AS) products to identify any changes that are needed with the implementation of Real-Time Co-Optimization (RTC) | |
| Principle Description | | The purpose of Key Principle 2, Suite of Ancillary Service Products, is answer the following questions:   1. What are the AS products under RTC and what type of Resources can provide them? 2. Under the RTC framework, should the definition of any of the existing AS be changed? 3. With the last two questions in mind, do the AS qualification processes need to be modified? | |
| RTCTF Discussion | | On 9/19/19, ERCOT staff presented material introducing KP2 subsections (1) through (6).  On 10/9/19, RTCTF discussed subsections (1)-(6) and debated the appropriate sustained MW qualification (hour vs 15-minutes) for Regulation Service and RRS.  On 10/30/19, RTCTF reached consensus on subsections (1)-(6) with a 15-minute qualification for Regulation Service and RRS. | |
| TAC Action Requested | | On 11/20/19, TAC vote to endorse KP2 subsections (1)-(6) for purposes of informing the Board. | |
| TAC Action Summary | | On 11/20/19, TAC voted to endorse KP2 subsections (1)-(6) for purposes of informing the Board. | |
| ERCOT Opinion | |  | |
| Board Action Requested | |  | |
| Board Action Summary | |  | |

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| Proposed Principle Language |

# *Principle Concepts for TAC Endorsement*

None

# *Principle concepts Previously Endorsed by TAC*

1) The set of AS products under RTC will be the products finalized with the approval NPRR863.

2) For all AS, the qualification process will determine for each Resource the maximum MW amount the Resource is qualified to provide. ERCOT will limit awards to no more than the qualified quantity.

3) Regulation Service

a) Continue with current qualification methodology. Existing Regulation Ancillary Service qualification tests can continue under RTC and ERCOT suggests currently qualified Resources qualification status to carry-over into RTC.

b) MW qualified to provide Regulation Service excluding Fast Responding Regulation Service (FRRS) will be limited to how much Resources can sustain for 15 minutes.

4) Responsive Reserve (RRS)

a) For a Generation Resource or Controllable Load Resource, continue with current qualification methodology and include the provision to sustain the qualified MW for 15 minutes.

b) For a Generation Resource operating in synchronous condenser fast-response mode, continue with current qualification methodology.

c) For a Load Resource controlled by high set UFR set at 59.7 Hz, continue with current qualification methodology.

d) For a Resource providing Fast Frequency Response (FFR) including under-frequency relay Controlled Load Resources, ERCOT deployment signal and high-speed site-level data to verify the 15-cycle response along with the sustained 15-minute output.

i) A Resource must be able to sustain for full 15 minutes its output, equal or greater than the amount requested for FFR qualification.

ii) A Resource must demonstrate its capability to provide full response in 15 cycles or faster when system frequency falls below 59.85 Hz.

iii) High-speed recorder capability must be demonstrated.

5) Non-Spinning Reserve (Non-Spin)

a) For Off-Line Non-Spin, continue with current qualification methodology.

b) All SCED-dispatchable Resources are qualified to provide On-Line Non-Spin based on their 30 minute blended ramp rate.

6) ERCOT Contingency Reserve Service (ECRS)

a) Off-Line ECRS can only be provided by Resources that have met the Quick Start Generation Resources (QSGR) qualification.

b) All SCED-dispatchable Resources are qualified to provide On-Line ECRS based on their 10-minute blended ramp rate.

c) For ECRS from a Load Resource other than a Controllable Load Resource, the same qualification process used today to test manual deployment of Load Resources for RRS, excluding requirements for under-frequency relay response will be used.

# *Principle Concepts in DisCussion at RTCTF*

None

# *Future Decision Points and Issues for Developing Principle Concepts*

None

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| Applicable Protocol Section(s) |  |
| Impacted System(s) / Application(s) |  |