Reliability Services Phase 2 Discussion

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Goal of RSI 2 is continue improving aspects of ISO's availability, outage substitution and replacement rules, and clarifying the RA process.

1. Develop template that captures and codifies RA requirements contained in an LRA's RA program documentation
2. Develop planned outage substitute capacity rules for flexible capacity resources*
3. Assess adequacy of existing planned and forced outage substitution rules for local capacity resources*
4. Establish change management process for resources that require updated Effective Flexible Capacity (EFC) quantities
5. Apply RAAIM availability assessments to Masterfile changes
6. Design rules needed to apply RAAIM to combination flexible capacity resources*
7. Streamline monthly RA showing process

* Three topics we will discuss during today's MSC meeting

Topic 2: Planned Outage Substitution Rules for Flexible Capacity Resources

- In event of a planned outage for flexible RA capacity, ISO will allow scheduling coordinator for capacity to provide planned outage substitute capacity

- Any substitute capacity must be eligible to provide at least same category of flexible capacity as capacity that goes on planned outage
  - Category 1 (Base)
  - Category 2 (Peak)
  - Category 3 (Super Peak)

Flexible RA capacity must provide same category or better

- Six Cities asserts ISO Tariff section 40.10.6 supports Flexible RA capacity should only be required to provide a substitute resource that is capable of meeting the must-offer obligation

- ISO intent is not to allow substitute capacity to meet *only* the must offer obligation without regard to quality of flexible capacity provided
  - SC could show a resource qualified for a given category on first day of the month and replace it with a lower quality flexible capacity resource on second day

Flexible RA capacity must provide same category or better (continued)

- ISO notes Section 40.10.6 defines must-offer obligations of flexible capacity resources shown in specific flexible capacity categories

- These must offer obligations are defined based on flexible capacity categories defined in section 40.10.3.2-4, including qualifying criteria for categories

- In RSI 2 filing ISO will clarify language to more clearly reflect “same category or better” concept

Topic 3: Add local capacity designation to RA showings and allow for like-for-like forced outage substitute capacity

- Add designation to supply plans that identifies specific capacity used to meet local capacity requirements

- Only use designated resources to determine if an LSE has shown sufficient local capacity
  - If an LSE has not designated sufficient local capacity, ISO will notify LSE and provide an opportunity to cure
  - If LSE designates sufficient local capacity it will not be allocated CPM costs caused by an individual local deficiency

Add local capacity designation to RA showings and allow for like-for-like forced outage substitute capacity (continued)

- ISO will notify both LSE and resource if there is a discrepancy between RA showing and supply plan
  - i.e. a resource is flagged as local on one, but not the other
    - ISO would default to supply plan if discrepancy is unresolved

- Collective deficiencies in a local area would still be determined using all RA resource that impact the given local area
  - ISO needs to accurately model topology of local area and capture all resources impact (positive or negative) on local area

Topic 6: The ISO proposes to apply RAAIM to combination flexible capacity resources

- Limited exception proposed in straw proposal did not provide same functionality as combination flexible capacity resources
  - This limited exception options has been removed

- Flexible capacity availability determined based combined resource's availability using maximum *daily* availability of the two resources

Example of flexible capacity availability

Resource	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Total
Resource A	95%	93%	92%	90%	75%	0%	0%	80%	90%	97%	
Resource B	75%	80%	90%	92%	80%	90%	92%	75%	80%	50%	
Maximum	95%	93%	92%	92%	80%	90%	92%	80%	90%	97%	90.1%

Appropriate way to measure availability of combination flexible capacity resources is to assess *total* obligation

- Must be able to calculate total availability obligations, system and flexible, of both resources
  - Only flexible capacity aspect of resources are combined
  - System obligations are cumulative
- Example

Resource	PMax	System RA	Flexible RA
Resource A	125	100	75 (combined)
Resource B	100	50	75 (combined)
Total	225	150	75

  - Each resource has an system requirement that must be met
    - Total system requirement of 150 MW
  - Flexibility requirement only needs to be met by one resource
    - Combined flexible requirement of 75 MW

The ISO proposes to create a pseudo-resource for the two resources in the combination

- This pseudo-resource is used only for purposes of calculating RAAIM charges or payments
- Need for pseudo-resources comes from need to capture both full system and flexible capacity obligations contained by combined resources
- Has no other implications to
  - Bidding behavior,
  - Dispatches, or
  - Other settlements for two resources in combination

An example of why a pseudo-resource is needed

Hypothetical Combination Resource

Resource	PMax	System RA	Flexible RA
Resource A	125	100	75 (combined)
Resource B	100	50	75 (combined)
Total	225	150	75

Assessment RAAIM assessment uses highest quality MOO for resources

- Assesses compliance with MOO for 75 MW flexible capacity first
- Compliance for MOO for system capacity after compliance with flexibility MOO

If Resource A meets flexible capacity MOO, resource B also meets flexible capacity MOO

- If Resource B meets flexible capacity MOO, then it also appears to meet system MOO

Resource	Availability (Flexible)	Incremental Availability (System)	Total
Resource A	75	25	100
Resource B	75	0	75

Outage of Resource B would result in 50 MW reduction in system capacity because

- Flexible capacity exceed system capacity for Resource B
- Resource A fulfills flexible capacity obligation for Resource B

Reduction to system capacity cause by outage should be captured in RAAIM

An example of how a pseudo-resource would work

Hypothetical Combination Resource

Resource	PMax	System RA	Flexible RA
Resource A	125	100	75 (combined)
Resource B	100	50	75 (combined)
Total	225	150	75

Pseudo-resource sums system obligations and combines flexible obligations

Resource	Availability (Flexible)	Incremental Availability (System)	Total
Resource C	75	75	150

Loss of system capacity caused by outage of Resource B can now be captured in RAAIM while flexible obligation is still covered by Resource A