Comments of Pacific Gas & Electric Company
Frequency Response Working Group

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Pacific Gas and Electric Company (PG&E) appreciates the opportunity to submit comments on the California ISO's frequency response working group, which was held on December 14th, 2015. Working with the ISO and other stakeholders, PG&E will continue to strive for high standards of grid reliability at an affordable cost for its customers.

Outline of PG&E Views

A. PG&E supports the ISO's proposal to buy primary frequency response from a neighboring balancing authority, but PG&E wants to ensure the following:

   1. The ISO will define and use a clear process for any procurement transaction.
   2. The procurement transaction will be acceptable to NERC.
   3. The ISO will confirm that there is sufficient transmission capacity to support the transaction.

B. PG&E encourages the ISO to continue driving towards clarified frequency response requirements and optimized headroom for resources within the ISO balancing authority area:

   1. All resources that are capable of providing frequency response and that participate in ISO markets should be required to provide primary frequency response, unless the resource is an existing[1] non-synchronous resource or there is a physical limitation associated with safety or regulatory compliance.
   2. ISO tariff language should be revised to separate frequency response requirements from spinning reserve requirements.
   3. NERC non-compliance penalties should be allocated to those resources that fail to perform.
   4. PG&E recommends that the ISO adjust its market optimization in order to reserve frequency responsive headroom at the least cost.

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[1] "Existing" should be defined as any resource that is already interconnected or is currently in the interconnection queue

A. Procurement of Frequency Response from a Neighboring Balancing Authority

PG&E supports the ISO's examination of buying frequency response from a balancing authority within the Western Interconnection. Compliance with NERC BAL-003-1 begins in December 2016, and so the ISO needs to act quickly to ensure it can meet the new standard.

While PG&E supports the ISO's proposal to buy frequency response from a neighboring balancing authority, PG&E requests that the ISO confirm the following points in advance of moving forward with any transaction:

1. The ISO will define and use a clear process for any procurement transaction:
   - The ISO will define a clear process for contracting with a neighboring balancing authority.
   - The ISO's process will include a method to obtain the best price possible, incorporating competitive best practices from previous transactions and/or procurement activity.
   - The ISO's process will include a justification for the procurement quantity (expressed in MW / 0.1 Hz). For example, the justification might be based on recent historical data; the ISO showed in its December 14th presentation that it fell short in 2013 of the current NERC requirement by 42 MW / 0.1 Hz.
   - The ISO will clarify whether the scope of the transaction includes upward and downward frequency response or only upward frequency response.
   - The ISO will specify how exactly the procurement costs will be allocated among ISO market participants.
   - The contract duration will be short, and the ISO will consider targeting specific times of year and/or times of day. Furthermore, the ISO will not renew any contract until it has re-evaluated its need for external frequency response capability.

2. The procurement transaction will be acceptable to NERC:
   - Any procurement transaction between the ISO and a neighboring balancing authority will be acceptable to NERC, since it is NERC that sets the frequency response obligation for each balancing authority, and it is NERC that assigns any non-compliance penalties.
   - The "selling" balancing authority will be fully responsible for the agreed-upon portion (expressed in MW / 0.1 Hz) of the ISO's primary frequency response obligation.
   - The ISO will examine the cost-allocation of any non-compliance penalties due to insufficient performance by the "selling" balancing authority; more specifically, the ISO will ask NERC whether it is appropriate for such non-compliance penalties to be allocated directly to the "selling" balancing authority.

3. The ISO will confirm that there is sufficient transmission capacity to support the transaction:
   - The ISO will confirm that the transmission system connecting the "selling" balancing authority to the rest of the Western Interconnection is currently designed and operated in a way to handle any increased flows (during frequency excursions) associated with the transaction.
   - More specifically, the ISO will explain the fundamentals of transmission path limits, the NERC/WECC rules related to such limits and why the transaction will not pose any risk to violating such rules.

B. Frequency Response Requirements and Optimized Headroom for Resources within the ISO

While neighboring balancing authorities can provide valuable frequency response capability, the ISO ultimately needs to take steps to ensure that it has efficient and reliable levels of frequency response provided by internal resources. On that front, PG&E still supports many of the ideas proposed by the ISO in its October 2015 straw proposal, and PG&E strongly encourages the ISO to continue driving towards clarified and enforced internal requirements. In addition, PG&E recommends that the ISO adjust its market optimization to reserve frequency responsive headroom at the least cost. Ultimately, such requirements and headroom should lead to better frequency response performance within the ISO and should thus reduce the need for inter-BA transaction, unless such options are more cost effective.

PG&E recommends that the ISO examine the following as part of a longer-term solution (with preparation work to begin as soon as possible):

1. All resources that are capable of providing frequency response and that participate in ISO markets should be required to provide frequency response, unless the resource is an existing[2] non-synchronous resource or there is a physical limitation associated with safety or regulatory compliance. Primary frequency response requirements should be specified in ISO tariff language, interconnection agreements and in accordance with NERC/WECC standards.

2. ISO tariff language should be revised to separate frequency response requirements from spinning reserve requirements. Currently, the ISO Tariff (Appendix K, Part B) embeds frequency response requirements within certification requirements for spinning reserve, and so this language blends two reliability needs that should be separate and distinct. Spinning reserve is a 10-minute product, while frequency response works within seconds. Furthermore, by separating the two products through revised tariff language, the ISO will be able to strengthen frequency response requirements without inefficiently driving up the price for spinning reserve.

3. Primary frequency response requirements should be reinforced by the allocation of NERC non-compliance penalties to those resources that fail to perform. On that note, PG&E requests that the ISO research (and then explain) the magnitude of the non-compliance penalties and how exactly the ISO will determine which resources are responsible for the inadequate performance.

4. While requiring resources to be frequency-responsive is a critical step, it does not guarantee that sufficient headroom (positive and negative) will be available on any given day. Accordingly, PG&E recommends that the ISO adjust its market optimization in order to ensure it has sufficient frequency response capability to reliably meet NERC standards. Such an adjustment to the market optimization would allow the ISO to reserve headroom (positive and negative) to provide frequency response in accordance with the expected system need and for the lowest total cost.

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[2] "Existing" should be defined as any resource that is already interconnected or is currently in the interconnection queue