



Decision on interconnection process enhancements – track 3

Stephen Ruty
Director, Grid Assets

Board of Governors Meeting
General Session
November 14, 2018

The interconnection process enhancement stakeholder initiative (IPE 2018) is comprised of multiple tracks.

- **Track 1: 7 topics approved in July**
- **Track 2: 8 topics approved in September****
- **Track 3**
 - November 14 Board of Governors Meeting
 - 3 topics
- **Track 4**
 - February 6 - 7 Board of Governors Meeting
 - 1 original topic, 1 new topic

Management is proposing the following interconnection process enhancements:

1. Revise ride-through requirements for inverter-based generation.
2. Revise the reliability network upgrade reimbursement cap.
3. Define and memorialize the concept of an affected participating transmission owner.

1. Revise ride-through requirements for inverter-based generation.

Management is proposing to revise technical requirements for asynchronous generators in response to inverters unexpectedly dropping off-line during the routine clearing of high voltage transmission line faults.

- Based on the recommendations in the NERC's May 2018 Advisory that addresses fault ride through and timely restoration of inverter based resources
- Technical requirements will be memorialized in generator interconnection agreements and will apply to generators that:
 - have not yet executed a GIA
 - have executed a GIA but changing inverters through material modification process
 - are existing generators and are repowering or replacing inverters, other than individual inverter replacement for maintenance

1. Revise ride-through requirements for inverter-based generation (cont'd).

Stakeholder Comments:

- **PG&E, Large-scale Solar Association, CalWEA, First Solar and EDF Renewables** – generally supportive
- **S Power** – technical revisions seem reasonable, but should only apply to projects submitting new interconnection requests and not to projects already operating or in the study process
- **SDG&E** – (i) recommended alternative voltage measurement units; and (ii) generators should be required to automatically provide data for frequency events

2. Modify the reliability network upgrade reimbursement cap.

Management is proposing to annually escalate the \$60,000 per MW reimbursement cap for reliability network upgrades using an industry-based escalation factor, starting in year 2013.

- The ISO will work with stakeholders to identify the most appropriate industry escalation factor
- All stakeholders who responded supported this proposal

3. Define and memorialize the concept of an affected participating transmission owner.

Management proposes to define and memorialize *affected* participating transmission owner in the tariff.

- Including how financial considerations for network upgrade cost responsibilities, cost caps, financial security requirements, and cost repayments are allocated between the interconnecting and affected PTOs

Stakeholder comments:

- Stakeholders support the cost and financial proposal
- Some stakeholders argued for a 4-party generation interconnection agreement

Management recommends the Board approve the proposed generator interconnection enhancements.

- Revising the technical requirements for inverter-based generators incorporates NERC recommendations to improve reliability of inverter-based generation.
- Escalates the maximum cost responsibility to balance cost and risk between interconnection customers and PTOs.
- Clarifies the cost responsibility for projects that impact both an interconnecting PTO and an affected PTO.