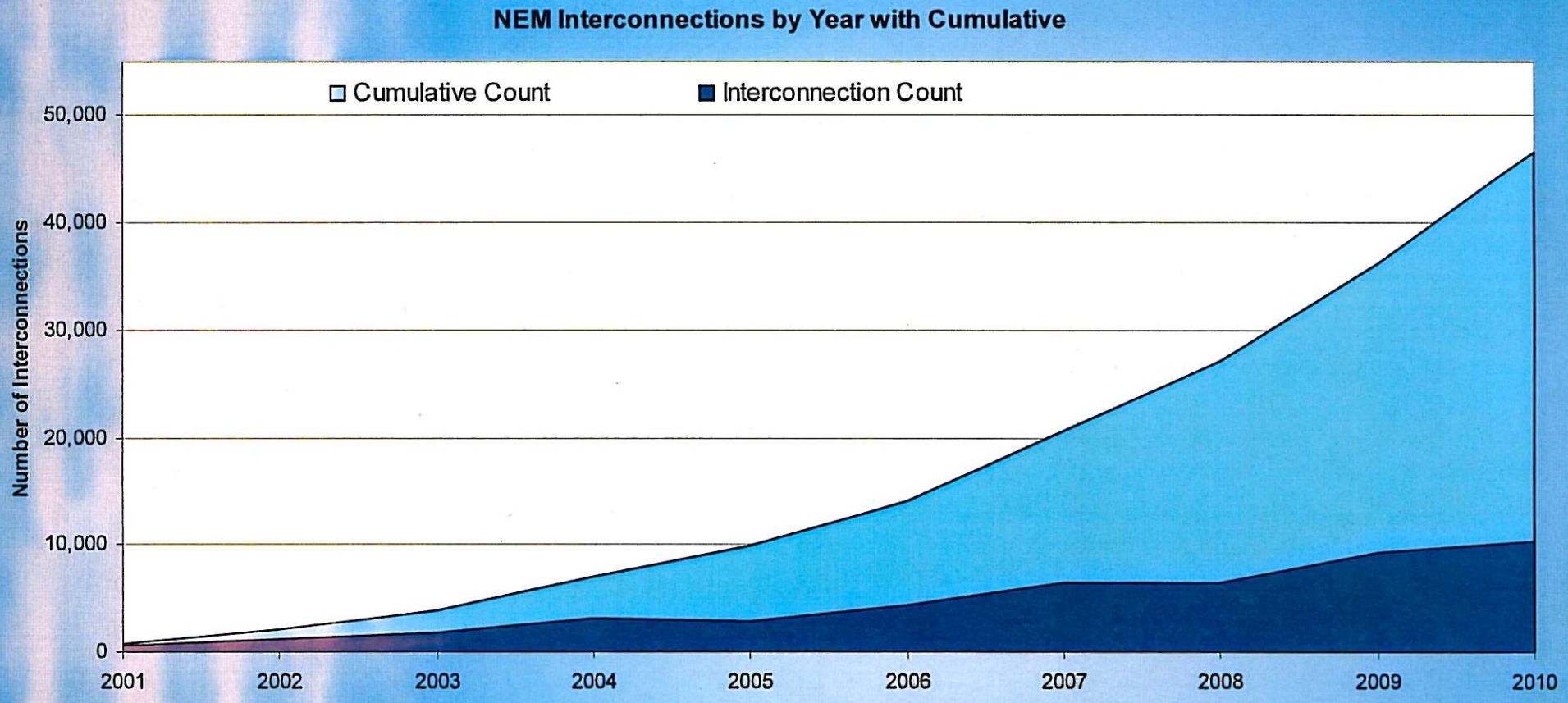
Accommodating High Volumes of Interconnection



PG&E Technical Issues: Case 1

Rule 21 D.3.d. : The maximum Net Nameplate Rating of the Generating Facilities shall be 20 kVA for single-phase generators, connected to a shared, single-phase secondary system.

Issue: NEM customer attempting to interconnect a PV system that exceeds the Rule 21 D.3.d requirement. The customer is responsible for paying to install a new distribution transformer for their PV system.

Proposal: PG&E has requested additional flexibility so that the customer will not be required to install a new transformer if PG&E's engineering review determines the existing transformer is sufficient to support the interconnection.

Status: Originally submitted Advice Letter in August 2009 to revise the 20kVA limitations. Advice letter was protested and PG&E worked with all parties to resolve outstanding concerns. Re-filed modified language in Advice Letter 3508-E-A in March. Recently suspended with a final decision still pending.

PG&E Technical Issues: Case 2

Rule 21 Screen Four: "Is the aggregate Generating Facility Capacity on the Line Section less than 15 percent of Line Section peak load?" This is used to determine if a project interconnection will qualify under a simplified Interconnection or if it will require Supplemental Engineering Reviews for engineering approval.

Issue: Higher Penetration of DG projects means increasingly hitting the 15% criterion, requiring additional engineering review. How do we transition to the >15% world?

- For the < 15% world, simplified trip settings in inverter-based DG are set to trip quickly to respond to various system disturbances, maintain personnel safety, and avoid causing problems with other DG customers.

- For the > 15% world or other Rule 21 screen thresholds are crossed, generators provide system support and trip last; the protection needs to be more refined and set for local fault detection and the general parameters (voltage and frequency) will be set with a much wider bandwidth. When the 15% threshold and/or other Rule 21 thresholds are crossed, will existing DG have to be reset and/or will it need to add new protection devices (e.g., direct transfer trip)?

Status: Open

Looking Forward: DG Interconnections Under a Holistic Approach

- Facilities are interconnected to the electric system via several programs (SGIP, CSI, WDAT, RAM, RPS etc.) and may be governed by CPUC or FERC interconnection rules.

- Facilities come in various technologies such as, solar, wind, small hydro, bio-gas, combined-heat power and micro turbines and can be inverter or machine based.

- We sometimes focus on interconnection and technical issues from a particular program based perspective. However, the grid's response to DG being installed is independent of programmatic choices. The relevant factors are the technical aspects.

It is becoming increasingly important to think holistically. Taking this approach will require coordination between the Rule 21 working group, Re-DEC, CAISO and other forums governing interconnections.

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