



August 29, 2019

Ms. Carey Bylin
Manager, Energy Section
Industrial Strategies Division
California Air Resources Board
1001 I Street, Sacramento, CA 95814

RE: SCE Comments Regarding the August 15, 2019 Discussion Draft of Potential Changes to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear

Dear Ms. Bylin,

Southern California Edison ("SCE") appreciates the opportunity to comment on the August 15, 2019 version of the California Air Resources Board's ("CARB") Discussion Draft of Potential Changes to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear ("Discussion Draft") as presented in the August 2019 CARB workshop.

SCE appreciates the many positive improvements in the feasibility of the Discussion Draft since the prior version. We thank CARB staff for taking the time to meet with, and understand the unique challenges of, the individual utilities in order to work toward a regulation that will reduce GHG emissions in a cost-effective manner, while preserving safety and reliability in the electricity grid.

Two of our largest concerns remain to be addressed within the Discussion Draft:

1. Our primary concern is the 2019 "baseline," which fails to account for projects that have already entered the multi-year planning, engineering, and licensing/permitting process, and fails to acknowledge the lack of current commercial availability of non-SF₆ alternatives. A baseline that is earlier than the phase-out date puts entities that must increase their SF₆ inventory between now and the phase-out start date (2025) at significant risk of violating the regulation. At a minimum, the baseline should be aligned with feasible phase-out dates and include a mechanism to add previously planned nameplate capacity or exempted GIE.
2. The phase-out dates proposed in the Discussion Draft for voltages greater than 145kV are not achievable. Additional time is need for two reasons: (a) manufacturers will likely have only limited inventory available, and (b) SCE employs a lengthy and rigorous process to install new equipment on SCE's electric system for safety and reliability reasons. We ask that CARB continue to consider the dates previously recommended by SCE and many other stakeholders.

SCE offers the following recommendations for your consideration.

I. The proposed baseline (“average CO₂e capacity”) should account for planned renewable and load growth projects and the use of SF₆-containing GIE when alternatives are not yet commercially available.

Over the next three years, SCE is projecting an 11% increase in load growth due to: 1) economic growth in California, 2) maintaining/improving grid reliability, 3) an influx of new substation/transmission line projects to connect renewable power and meet California’s renewable energy goals by 2025, and 4) replacing obsolete and high-risk equipment to increase grid resiliency and safety.

According to CARB’s 2017 Climate Change Scoping Plan, electricity grid SF₆ losses in 2017 were 0.18 MMTCO₂e, which is less than 1 twentieth of 1 percent (0.042%) of California’s total GHG emissions (424.1 MMTCO₂e).¹ Comparatively, GHG emissions from electricity generation comprise 15 percent of California’s total GHG emissions (62.39 MMTCO₂e).¹ Reducing GHG emissions from electricity generation through increased availability of renewable energy sources is a critical component of California’s goals to reduce GHG to 80 percent below 1990 levels by 2050. Through SB 100, California also set electricity generation-specific goals to derive 60 percent renewable energy by 2030 and 100 percent by 2045.²

SCE has approximately 22 CPUC-approved projects associated with renewable energy sources with operating dates between 2020 and 2023.³ A 2019 baseline would have significant negative impacts on SCE’s ability to implement these upcoming infrastructure projects. It also puts GIE owners at significant risk of violation. CARB should consider the broader, more impactful emissions-reducing state goals when developing the SF₆ regulation and consider removing the proposal of a 2019 baseline. At a minimum, in order to account for in-flight renewable load-growth projects through 2024, and to also align with the Discussion Draft phase-out dates, we propose that CARB use 2025 as the baseline year for average CO₂e capacity, and allow GIE owners to update their average CO₂e nameplate capacity baseline and annual emissions limit when the GIE owner needs to obtain an SF₆ Phase-Out Exemption to include nameplate capacity of exempted GIE.

II. Modify SF₆ Phase-out Table dates to be consistent with commercial availability and minimum testing requirements of GIE.

SCE supports CARB’s tiered phase-out schedule for new GIE purchases that is dependent upon the commercial availability of non-SF₆ equipment for each voltage class of equipment that is economically feasible in combination with the modified SF₆ Phase-Out Exemption process to ensure SF₆ GIE phase-out

¹ https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-17.pdf

² <https://www.cpuc.ca.gov/rps/>

³ The initials “CPUC” refer to the California Public Utilities Commission.

does not compromise the safety, reliability, and integrity of the electrical system. The addition of Distribution-level phase-out categories/dates was an excellent addition to the latest Discussion Draft.

In the August workshop, CARB requested feedback on proposed phase-out dates. SCE would like to reiterate our previously recommended phase-out dates, which are based on anticipated manufacturer availability and allow necessary time to appropriately evaluate, test, install, and pilot new equipment for safe and reliable operation:

Table 1. Phase-out Dates for Distribution-Level SF₆ GIE

| Configuration | Voltage (kV) | Short-Circuit Current (kA) | CARB Phase-out Date | SCE Proposed Phase-out Date |
|--------------------------|--------------|----------------------------|---------------------|-----------------------------|
| Aboveground ⁴ | < 38 | < 25 | January 1, 2025 | January 1, 2025 |
| | | ≥ 25 | January 1, 2025 | January 1, 2025 |
| | ≥ 38 | < 25 | January 1, 2025 | January 1, 2031 |
| | | ≥ 25 | January 1, 2025 | January 1, 2031 |
| Belowground | < 38 | < 25 | January 1, 2025 | January 1, 2031 |
| | | ≥ 25 | January 1, 2025 | January 1, 2031 |
| | ≥ 38 | < 25 | January 1, 2025 | January 1, 2031 |
| | | ≥ 25 | January 1, 2025 | January 1, 2031 |

Table 2. Phase-out Dates for All Other SF₆ GIE

| Voltage (kV) | Short-Circuit Current (kA) | CARB Phase-out Date | SCE Proposed Phase-out Date |
|-----------------|----------------------------|---------------------|-----------------------------|
| ≤ 72.5 | < 63 | January 1, 2025 | January 1, 2025 |
| 72.5 < kV ≤ 145 | < 63 | January 1, 2025 | January 1, 2025 |
| 72.5 < kV ≤ 145 | ≥ 63 | January 1, 2025 | January 1, 2029 |
| 145 < kV ≤ 245 | All | January 1, 2029 | January 1, 2033 |
| > 245 | All | January 1, 2031 | January 1, 2036 |

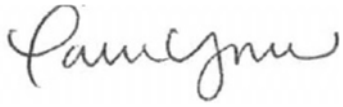
We emphasize that these proposed dates are based on in-depth research and analysis of necessary and important acquisition and testing processes and extensive consultation with manufacturers. We have previously provided detailed background data about this research and analysis, which support the proposed dates, and would be happy to meet with CARB Staff again if any additional information is requested.

Conclusion

SCE thanks CARB staff for the opportunity to provide comments on the Discussion Draft. Our two biggest concerns are reiterated here, but we would also appreciate the opportunity to meet with CARB Staff to discuss the practicability of several other aspects of the revised Discussion Draft and provide any other background data that could be of value. We look forward to continuing to work with you to reduce GHG emissions while maintaining safety and reliability in the electricity grid.

⁴ Aboveground distribution GIE includes pad-mounted or pole-mounted equipment.

Respectfully,

A handwritten signature in cursive script, appearing to read "Tammy Yamasaki".

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