WATER & POWER
Serving Central California since 1887

(209) 883.8300 • www.tid.org

333 East Canal Drive • P O Box 949 • Turlock, CA 95381-0949

August 29, 2019

Carey Bylin
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Filed electronically

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

Dear Ms. Bylin,

Turlock Irrigation District ("TID") submits the following comments on the ARB's August 15, 2019 Discussion Draft for amendments to the SF6 Regulation.

As discussed below, TID is in support of the ARB's efforts to phase out SF6, provided there is sufficient flexibility to ensure that transmission and distribution operators can continue to meet reliability and safety standards, particularly at the higher voltage levels. TID recommends the following revisions to the Discussion Draft:

(1) elimination or realignment of the proposed 2019 "baseline" for calculating emissions limits;

(2) adjust the transmission level phase-out dates to reflect the schedule proposed by most of the utilities;

TID Background

TID was organized as the first Irrigation District in California on June 6, 1887 and is in its 131st year of operation. TID currently serves a retail electric customer base of just over 100,000 customers and provides irrigation water to over 5,800 growers and nearly 150,000 acres of farmland. Of the 11 communities that TID serves, seven are classified as Disadvantaged Communities, and a majority of our service territory is in the top 20% of Cal Enviroscreen 3.0 impacted communities.

TID's mission is to provide stable, reliable, and affordable water and power to its customer owners, be good stewards of our resources, and provide a high level of customer satisfaction. TID has been a long-time supporter of California greenhouse gas standards, and made early investments in wind energy and other renewable sources before there was any requirement for Publicly Owned Utilities to do so. TID has also made considerable investments in reducing the GHG emissions of its transmission and distribution system by investing in

vacuum technology at the 72.5 kV level. TID is investing in GHG reductions and is on course to reduce its aggregate emissions while still maintaining reliability.

TID is distinguished from the large investor owned utilities in that it operates a Balancing Authority Area that is not part of the California Independent System Operator. TID is one of eight Balancing Authorities ("BA") in California, tasked with balancing retail demand, generation, and wholesale purchases and sales while providing adequate reserve capacity to maintain reliability within its Balancing Authority Area. TID's generation, transmission and distribution facilities are all necessary to support TID's legal requirements and compliance with National Electric Reliability Council ("NERC") standards.

Discussion

1. The ARB Should Either Eliminate or Establish the Nameplate Baseline Consistent with the Phase-Out Schedule.

TID's primary concern with the Discussion Draft is the 2019 baseline calculation. It appears to TID that part of the rationale the ARB is employing in proposing the baseline concept is a concern that the GIE equipment owners will anticipate the onset of the phase-out period and be motivated to "stockpile" GIE equipment. TID does not have extra breakers in an inventory, we do not purchase or budget for excess breakers and with the ARB's visibility into all reporting entities inventories, they can monitor utility GIE increases. If there is a concern, then the ARB should insert regulatory language that precludes a ramp up of inventory prior to the phase-out period. Therefore TID suggests that the ARB eliminate the baseline concept altogether.

As a second best solution, the ARB should align the baseline with the phase-out periods. In order to highlight the unrealistic nature of the 2019 baseline TID is reemphasizing our previous comments as follows. Prior to the phase out date for the voltage class and application of the equipment, it is reasonable to assume a low GWP technology is either unavailable or unproven. In this case, the only available solution will likely require SF6 technology. Therefore, if a replacement or improvement is required, the impacted utility will have no choice but to increase its SF6 inventory based on an increase in total nameplate capacity. Applying an emissions limit based on 2019 nameplate capacity would cause the already strict 1% emissions limit to become even more stringent with any additional SF6 capacity that is added after 2019.

TID has been very proactive in making investments in SF6 handling equipment and has been diligent in identifying and addressing any equipment leaks on its system. That aside, the current 1% emission rate is a restrictive rate, especially given TID's relatively small SF6 inventory. TID's practices include monthly rounds of all substations in which the pressure is recorded at each piece of GIE. Additionally, low gas pressure alarms will alert the 24/7 power operations group of the condition. If the pressure vessel of a breaker develops a pinhole leak, by the time it is identified and repaired, it is possible emissions would approach or exceed current limits. A condition such as this is something completely outside the control of best maintenance practices. By holding the nameplate capacity to an arbitrary level, the only effect it would have is to reduce

the threshold of an already restrictive emissions limit. This creates a real challenge for maintaining compliance by small and medium sized transmission and distribution operators. A single release can put the entity over the strict emissions limit. The proposed 2019 baseline will not prevent this type of failure nor will it improve internal practices.

This proposal is particularly concerning for TID because it has oil breakers that will be replaced due to equipment degradation at the 230 kV voltage class. Non-SF6 alternatives are not anticipated in the near term. Additionally, there are several other projects identified to address transmission vulnerabilities and equipment inadequacies. Collectively, these projects could increase TID's existing SF6 capacity by 34% through 2025 and 60% through 2027. The following table depicts TID's anticipated SF6 GIE capacity growth based on the 10-year planning horizon.

	Date	CARB Proposed Emission Rate Limit	YoY % increase in SF6 inventory	Effective Emission Rate Limit (decrease)
BASELINE YEAR	2019	NA	NA	1.00%
	2020	1%	0%	1.00%
	2021	1%	0%	1.00%
	2022	1%	9%	0.91%
	2023	1%	8%	0.83%
	2024	1%	6%	0.77%
	2025	1%	8%	0.69%
	2026	1%	0%	0.69%
	2027	1%	20%	0.50%
	2028	1%	0%	0.50%

With ARB's baseline proposal, TID will be at a 0.50% effective emissions rate limit by 2027. This is lower than the 2049 emissions limit proposed by the ARB in Table 3 of the regulation. These aforementioned upgrades will be critical to maintaining TID's compliance with NERC reliability standards and keeping electricity flowing to power hospitals and schools. The costs of SF6 or other technologies will also be a key consideration in light of the sensitivity of DACs to rate increases.

TID takes its compliance obligations very seriously and this risk is a major concern. TID does not feel it is reasonable to apply this limitation while the inventory of SF6 is still permitted to increase. As such, TID recommends the baseline nameplate capacity concept be eliminated or as a second alternative, be aligned with the SF6 phase-out schedule. In making either of these changes, the ARB would still ensure that any additional SF6 capacity is still subject to a strict

1% emissions limit, but the regulation provides room to grow, consistent with considerations for reliability, safety, and cost.

2. **The ARB Should Revise Its Transmission Level Phase-out Dates to Reflect the Schedule Proposed by Most of the Other Utilities.**

When coupled with a reasonable process for allowing continued SF_6 purchases and installations where safety, reliability, space, or technology issues make alternatives infeasible, TID is in support of the tiered phase-out of SF_6 in gas-insulated equipment. That said, TID has significant concerns about the practicability of the proposed phase-out dates included in Table 2 §95352(a) of the Discussion Draft.

TID suggests that the ARB consider the proposed Table provided below. We wanted to assure the ARB that the phase-out dates we are proposing were determined after a comprehensive review of available non-SF_6 GIE alternatives on the market, and feedback from our internal subject matter experts. The proposed phase-out dates below reflect our timelines for acquiring, piloting, and testing non-SF_6 GIE alternatives to safely and reliably phase out SF_6 GIE.

We restate the following phase out schedule for SF_6 GIE:

Voltage (kV)	Short-circuit Current (kA)	CARB Phase-out Date	Utility 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

Conclusion

TID appreciates this opportunity to provide feedback on the Discussion Draft and looks forward to working with the ARB to ensure that the environmental goals of this program can be satisfied in conjunction with considerations for reliability and cost.

Sincerely,

/s/

Ken R. Nold
Turlock Irrigation District