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August 29, 2019

Ms. Carey Bylin
Energy Section Industrial Strategies Division
California Air Resources Board
10011 Street, Sacramento, CA 95812

Subject: **San Diego Gas and Electric Company's Additional Comments to the Discussion Draft of Potential Changes to the Regulation for Reducing Sulfur Hexafluoride (SF6) Emissions from Gas Insulated Equipment (GIE), dated August 15, 2019.**

Dear Ms. Bylin,

San Diego Gas and Electric Company (SDG&E) submits this letter to provide SDG&E's perspective on the impacts with regards to the Discussion Draft regulation, presented on August 15, 2019.

§ **95355.2(a) Sulfur Hexafluoride Phase Out**

For distribution-level equipment, SDG&E supports the phase out dates as suggested by the "Commenter Suggested Dates". These dates allow for SDG&E to meet any anticipated or unanticipated GIE growth, with consideration of a range of commercially-available non-SF6 alternatives.

Configuration	Voltage (kV)	Short-circuit Current (kA)	CARB Phase out Date	Commenter Suggested Dates
Aboveground	< 38	< 25	1/1/2025	≤ 17.5 kV: 1/1/2025 Otherwise: 1/1/2031
		≥ 25	1/1/2025	
	≥ 38	< 25	1/1/2025	
		≥ 25	1/1/2025	
Belowground	< 38	< 25	1/1/2025	1/1/2031
		≥ 25	1/1/2025	
	≥ 38	< 25	1/1/2025	
		≥ 25	1/1/2025	

For transmission-level equipment, SDG&E supports the phase out dates as suggested by the "Commenter Suggested Dates". These dates allow for SDG&E to meet any

anticipated or unanticipated GIE growth, based on an assumption that a range of commercially-available non-SF6 alternatives will be available in the market. If a range of commercially available non-SF6 alternatives are made available in advance to the "CARB Phase out Date" then SDG&E can support these dates, however, currently Hitachi is the only manufacturer who is capable of a single non-SF6 alternative (69 kV).

Voltage (kV)	Short-circuit Current (kA)	CARB Phase out Date	Commenter Suggested Dates
≤ 145	< 63	1/1/2025	1/1/2025 – 1/1/2029
	≥ 63	1/1/2025	1/1/2027 – 1/1/2029
≤ 245	All	1/1/2029	1/1/2029 – 1/1/2033
> 245	All	1/1/2031	1/1/2031 – 1/1/2036

§ 95355.3. SF6 Phase Out Technical Infeasibility Exemption

SDG&E requests that CARB consider reducing the exemption review time for transmission-level equipment [only] to 30-days. For transmission-level GIE on a blanket contract, it takes 175-280 days to get a GIE to the jobsite, depending on the voltage level and quantity of equipment. As such, requesting a CARB exemption, given the current 75-day review time, will add roughly 134 days to the existing timeline, to 309-414 days to get GIE to the jobsite.

- Review existing blanket contract for available equipment - 1 Day
- Check non SF6 GIE available from manufactures - 14 Days
- Verify compatibility- Obtaining photos, drawings, and evaluating technical considerations - 30 Days
- Prepare SF6 Phase Out Exemption -14 Days
- Submit SF6 Phase Out Exemption to CARB for review - 75 days

In the case that the CARB exemption is rejected, it will add an additional 90 days to go to bid, evaluate, and award, resulting in a worst-case scenario of 399-504 days to get the GIE to the jobsite.

The timeline associated with Gas Insulated Switchgear (GIS) will be a lot longer depending on the voltage level and the quantity of bays requested.

SDG&E also requests that CARB consider expanding the exemption criteria to "< 3 manufacturers producing specific non-SF6 GIE". The current consideration of "< 2 manufacturers producing specific non-SF6 GIE" provides for a too-limited scope of manufacturers and may not represent the reality of commercially available GIE.

§ 95352.2. Annual Emissions Limit

SDG&E proposes the baseline annual emissions limit for substation equipment be based on the year before the phase out date. Currently the users of substation SF6 equipment have only one manufacturer and one type of non-SF6 circuit breaker commercially available for purchase. For all the other substation SF6 equipment, the technology is not commercially available. SDG&E has many new projects adding additional SF6 equipment and replacing aging oil circuit breakers (OCB) with SF6 circuit breakers. In addition, SDG&E is constructing an SF6 GIS Substation with

three possible SF6 GIS substations for future installation. Since the availability of non-SF6 equipment is limited, SDG&E thinks the baseline year for the annual emission limit should not be 2019 as proposed in the draft regulation, but rather based on the year before the applicable phase out date (2025).

New Projects in Construction with SF6 GIE Installations

SDG&E is currently constructing a new 230 kV GIS Substation with 11-230 kV SF6 gas circuit breakers (GCBs), disconnects, current transformer (CTs), potential transformer (PTs), grounding switches, and bus installed (in service Dec 2022). Anticipated increase of SF6 in the amount of 8,990 lbs.

SDG&E is also currently constructing a new 138 kV GIS Substation with 23-138 kV SF6 GCBs, disconnects, CTs, PTs, grounding switches, and bus installed (in service April 2021). Anticipated increase of SF6 in the amount of 13,100 lbs.

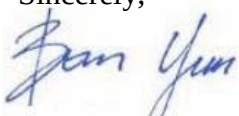
Tentative New Projects with SF6 GIE installations

Eighteen (18) 230 kV circuit breakers and fourteen (14) 69kV circuit breakers anticipating an increase of SF6 of 21,000 lbs.

SDG&E would like to thank CARB staff for the opportunity to offer further comments to the Discussion Draft regulation and continue to support the state's goal to reduce high GWP gas emissions and ensure the continued safe and reliable operation of the statewide electricity grid.

Should you have any questions please contact me at (858) 654-1658 or via email: byim@semprautilities.com or Ms. Elizabeth Cason, SDG&E Senior Counsel, at (858) 654-1560 or via email: ecason@sdge.com.

Sincerely,



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