August 29, 2019

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

Filed electronically

RE: WPTF 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,

The Western Power Trading Forum ("WPTF") provides the following supplemental comments on the Discussion Draft referenced above. WPTF is a broad-based organization of companies that advocate for competitive market rules throughout the Western Interconnection. WPTF's interest in the Discussion Draft primarily relates to how the Discussion Draft would affect the use by independent power producers' ("IPPs") of SF6 Gas Insulated Equipment ("GIE") in the switchgear applications of power plants in California. Since nearly all power plants use SF6, the existing SF6 Regulation and the Discussion Draft could affect all technology types. Changes to the existing SF_6 Regulation will also affect the existing flexible capacity grid operators will need to rely on to integrate intermittent renewable generation.

As discussed herein, WPTF remains concerned that the proposed SF_6 phase out and infeasibility exemption process do not address the *diverse* needs of the power sector. IPPs face different challenges than transmission and distribution operators who have more flexibility to plan for and rate base the technology changes the ARB seeks to achieve through its policy goals. New infrastructure will be needed to integrate the growing volume of clean generation on the grid, and it is important that the ARB evaluate this program holistically within the broader efforts of the state to drive emissions reductions. Until it is clear that new technology that can replace SF_6 GIE is available and cost-competitive at higher voltages, the ARB should avoid setting rigid standards that may disrupt the State's efforts to decarbonize the grid.

WPTF's comments are summarized as follows:

1. The phase out should not apply to the replacement of individual switch gear components within existing installations so long as the quantity of SF_6 stored in the existing device does not change.

2. The baseline year(s) for establishing the volume of GIE inventory subject to the 1% emissions reduction standard should be the same as the phase out years.

3. The de-minimis threshold should be 10,000 $MTCO_2(e)$.

4. The ARB should account for the costs of retrofitting facilities in evaluating whether the technical feasibility exemption applies. The ARB should include retrofit costs in its economic analysis.

DISCUSSION

1. Phase Out Applicability

WPTF remains concerned that the Discussion Draft would impose new risks of potentially expensive retrofit costs that are uncertain because the technology solutions at the higher voltage classifications remain uncertain. This situation could disrupt the flexible capacity available to grid operators like the California Independent System Operator ("CAISO"). The Discussion Draft would broaden the list of "gas insulated equipment" subject to the SF_6 regulation, thereby limiting a generator's ability to make repairs or undergo maintenance quickly. When unforeseen repair needs arise, the Discussion Draft would put generators at risk of extended outages while the ARB evaluates whether a "technical infeasibility exemption" is warranted.

Even in situations where there is sufficient time to file for a Technical Infeasibility exemption (e.g., ahead of a planned maintenance outage), the analysis the ARB would undertake to grant an exemption remains unclear. For example, if an alternative, non-SF_6 technology is "technically feasible" there would be no evaluation of the cost of a complete retrofit compared to simply replacing a single (and much less expensive) SF_6 GIE component. WPTF therefore remains concerned that the Discussion Draft would create new risks for the flexible capacity grid operators will continue to rely upon to integrate an ever-growing amount of intermittent generation.

The Discussion Draft would broaden the definition of GIE to cover a list of individual components within a broader GIE installation – e.g., "capacitors". WPTF understood previous iterations of the phase-out to generally prohibit the sale of new SF_6 GIE after the specified dates, where the phase out would apply to the total replacement of the "combination of electrical power equipment." In other words, the phase out would preclude (absent an infeasibility exemption) the complete replacement of an entire SF_6 GIE system or installation of new SF_6 GIE systems, but would not preclude the replacement of individual components within a GIE, so long as the total "nameplate capacity" does not increase. Even after the phase out date, GIE owners need to be able to conduct routine maintenance and should be able to quickly replace individual GIE components. This flexibility is necessary to ensure that generators remain available for dispatch in the CAISO. The ARB should confirm that the phase out provisions would not restrict the ability of generators to undertake routine maintenance and would not require a generator to undergo a lengthy technical infeasibility exemption process to replace individual components.

2. Setting a Baseline Consistent with the Phase Out Schedule

The already strict 1% emissions limit would become even more stringent with any additional SF6 capacity that is added after 2019. Under the current regulation, a single release of SF6 can put an entity over the emissions limit, and the 2019 baseline year would make that standard even more strict for some companies.

To address this concern, the ARB should revise the Discussion Draft to establish the baseline by voltage class. The baseline should be established based on reported data for the first year for each of the phase out deadlines. In other words, the baseline for 145kV and below would be set in 2025, the baseline for 145 kV – 245 kV would be set in 2029 and the baseline for 245 kV and above would be set in 2031. In making this change, the ARB would ensure that any additional SF6 capacity is still subject to a strict 1% emissions limit.

In addition, the ARB should reevaluate the process for establishing the nameplate capacity. WPTF is concerned that the proposed process specified in Section 95355.2 (particularly, the evacuation of SF6) could pose new risks of release. Instead, the ARB should evaluate compliance with the emissions

limit as it does under the current Regulation (i.e., based on changes in weight of cylinders and measuring how much SF6 is added to active GIE).

3. Technical Infeasibility Exemption and Cost

WPTF is concerned that the ARB is establishing a phase out obligation before the technology pathway for alternatives to SF6 has been clearly established (particularly at the high voltage levels). While WPTF appreciates the ARB's desire to address all forms of GHG emissions, the ARB should also account for cost and the likelihood of emissions. The 1% emissions standard sets a very high bar that most operators are already managing to and taking all steps possible to minimize the risks of emissions. The ARB should consider these relative risks and quantities of emissions as a policy rationale for allowing regulated entities to seek a Technical Infeasibility exemption based solely on the potential cost of an SF_6 alternative. Our concern is that an SF_6 alternative may be technically feasible in the future but render an IPP who is dependent on recouping its capital costs from competitive power markets uneconomic if the cost is too high.

To address this concern, the ARB should establish an explicit cost threshold available to regulated entities seeking the Technical Infeasibility exemption. As one possible option, the ARB could look to the cap-and-trade price ceiling structure as a model (i.e., a $/MTCO2(e) cost cap). The ARB would multiply this "cost cap" by the total emissions sought to be exempted as infeasible – e.g., 1,000 $MTCO_2(e)$ of capacity x $90 cost cap = $90,000. If the bid price for the SF_6 alternative is greater than $90,000 to be fully installed for each individual replacement, then the Technical Infeasibility exemption would apply.

In addition to a cost exemption, the ARB should establish a process for emergency approvals of the Technical Infeasibility exemption. Some parts in the power sector can have extensive lead times to obtain, and it may be that in order to continue to make a power plant available to the CAISO or another balancing authority for dispatch, the part must be replaced quickly. IPPs can face severe penalties in the event that they are unavailable outside pre-approved maintenance and outage windows. As a result, there is a need for expeditious approvals. The Technical Infeasibility exemption should explicitly include consideration of the feasibility of installing an alternative technology within a certain timeframe.

4. De-Minimis Threshold

WPTF continues to urge the ARB to set the de-minimis threshold consistent with the ARB's inclusion threshold for the Mandatory Reporting Regulation. In the absence of being able to develop an arbitrary metric for setting a de-minimis standard, the ARB should at least maintain consistency among its regulations. This change is also warranted because it treats similarly situated facilities the same (i.e., those just above and below the 5,500 $MTCO_2(e)$ threshold.

The current SF_6 regulation applies very differently to similar SF_6 releases depending on how many facilities the regulated entity operates. For a company that owns only one facility subject to the SF_6 regulation, the 1.0% emission limitation may be difficult to adhere to, even after implementing best practices for maintenance and handling of switchgear and adhering to manufacturer recommendations. On the other hand, for a large T&D operator with a multitude of facilities using SF_6 in switchgear applications, a single release will not likely create a compliance issue. The standard will continue to tighten as the 1% threshold drops to .5% in the future.

The ARB should maintain consistency with other ARB GHG regulations by setting a 10,000 $MTCO_2(e)$ applicability threshold. The proposal for a 5,500 MT CO_2e applicability threshold is arbitrary. A 10,000 $MTCO_2(e)$ threshold would be consistent with the applicability threshold in the Mandatory

Reporting Regulation for Greenhouse Gas Emissions. This change would reduce the administrative requirements and compliance costs for entities with only a few GIE. Entities below the 10,000 $MTCO_2(e)$ threshold represent a small percentage of the total statewide SF_6 inventory, and their exclusion should not materially affect the environmental performance of the SF_6 Regulation. Entities below this proposed threshold may lack the ability to recover replacement costs from the competitive power markets. If the ARB makes this change, the ARB should continue to require reporting by GIE owners. However, the phase out schedule should not apply to facilities that fall below the exemption threshold.

CONCLUSION

WPTF greatly appreciates this opportunity to engage with the ARB staff on the rulemaking design before the formal rulemaking begins. WPTF looks forward to working with the ARB to ensure that the economic, reliability, and competitiveness implications of this Regulation are fully evaluated and addressed in the final regulatory design.

Sincerely,

/s/

Scott Miller
Executive Director
Western Power Trading Forum