

July 2, 2021

Richard Corey
Executive Officer, California Air Resources Board
1001 I Street
Sacramento, California 95814

Dear Mr. Corey:

Subject: Comments on the Proposed Amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (Second 15-Day Changes)

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to comment and work with the California Air Resources Board (CARB) on the Proposed Amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (SF6 Regulation).

LADWP recognizes the complexities involved in developing the very technical SF6 Regulation and appreciates the many discussions with CARB staff and the changes made to the rule language to address the electric utilities' concerns. Below for your consideration are comments on specific sections in the rule language where additional revisions and clarification in the Final Statement of Reasons would be beneficial.

1) Section 95357: SF6 Phase-out Exemption – need assurance that electric utilities can successfully apply for and receive an exemption to maintain reliability of the electric grid.

With the SF6 phase-out beginning in 2025, LADWP is taking proactive steps to prepare for the phase-out. Reliability of the electric grid is essential to public health and safety, so any new circuit breaker technology needs to be thoroughly tested to ensure it will operate reliably prior to installing it in the electric grid. LADWP is partnering with the Electric Power Research Institute (EPRI) to conduct testing on non-SF6 technology circuit breakers from at least two manufacturers, after the non-SF6 circuit breakers become commercially available (which is expected a few years from now).

Until such time as the non-SF6 technology can meet LADWP's needs, we have to depend on the exemption and failure notification process to maintain LADWP's transmission and distribution substations which currently rely on SF6 gas-insulated equipment (GIE).

The exemption goes hand-in-hand with the SF6 phase out and therefore should be workable and not place an unreasonable burden on utility staff to obtain an exemption. Reliability of the electric system will hinge on the exemption process to satisfy the electric system needs. LADWP owns & operates 25% of the transmission lines in California. Operation of LADWP's electric grid currently depends on more than 2,000 pieces of SF6 gas-insulated electrical

equipment to manage the flow of electricity through the system. LADWP needs assurance that if we apply for an exemption to replace a piece of SF6 GIE, the exemption will be granted.

To provide this assurance, LADWP supports the Joint Utility Group (JUG) comments to clarify the exemption rule language. LADWP appreciates the information provided by CARB staff that approval of the exemption will be based on a “completeness check” of the application package, and that the justifications should be based on bids received instead of searching for what may be available on the market. These clarifications are important to make sure that utilities can successfully apply for and receive an exemption, so that the SF6 Regulation does not undermine the utilities’ ability to maintain the reliability of the electric grid.

2) Section 95357(i)(2): Failure Notification – may need additional time to report “Date activated” of the replacement GIE to CARB

When an in-service GIE fails and must be replaced for grid reliability, the rule allows for procurement of a replacement SF6 GIE without prior approval from CARB, followed by submittal of information about the replacement GIE to CARB. LADWP appreciates this Failure Notification process because it enables the GIE owner to address the failure and order the replacement GIE as quickly as possible, which may take months to be manufactured and delivered. LADWP appreciates CARB recognizing this and revising the date to submit the list of specific information about the replacement GIE to CARB from “within 45 days of the failure” to “within 45 days of the acquisition of the GIE device used to resolve the failure”.

The list of information to be reported to CARB includes the date the replacement GIE was activated or placed in service. In some cases, it may take longer than 45 days to install, test, and activate the replacement GIE, especially in high voltage stations. Installing the replacement GIE requires scheduling an outage to remove the failed GIE and install the replacement GIE, and may require repairs to the foundation or modifications to the wiring. The outage is especially important for safety of the electrical station construction and maintenance crews while working in a high voltage station. It is difficult to schedule an outage during periods of heavy demand on the electric system, which may delay installation of the replacement GIE.

Once the replacement GIE is delivered, the 45-day clock starts to submit the list of specific information about the replacement GIE, including “Date activated”, to CARB. If the replacement GIE is still in the construction and testing process, most of the information on the list can be submitted to CARB within 45 days but “Date activated” will not be known. LADWP requests clarification whether it is acceptable to submit the available information within 45 days, and if any items are unavailable, identify the information as unavailable and will be submitted later when it becomes available. If the rule language does not provide this flexibility, LADWP suggests revising the timeframe for submitting the information from 45 days to 60 days as a “non-substantive” change that CARB staff could make before finalizing the rule.

3) Section 95357.2 (c)(1) Nameplate Capacity Adjustment Procedure - add option to use either GIE manufacturer-provided pressure gauge or external gauges to measure GIE initial gas pressure prior to removal of gas

LADWP appreciates that CARB included the Nameplate Capacity Adjustment procedure in the rule. Use of this procedure will be necessary to correctly report emissions, especially for higher voltage GIE where discrepancies ranging from 40 to 360 pounds between the actual gas fill

amount and the manufacturer estimated gas capacity have been encountered. Such discrepancies will result in false emissions, and could cause an exceedance of the one percent (1%) annual emission limit.

LADWP supports the overall procedure, but recommends including two options for measuring the GIE initial gas pressure to determine whether the GIE is at the proper operating pressure prior to extracting the gas. As written, the rule language specifies the use of pressure and temperature gauges meeting certain accuracy requirements, then convert the pressure to temperature-compensated pressure. Most non-hermetically sealed GIE have an integrated temperature-compensated gas pressure gauge attached directly to the GIE gas vessel. Since this integrated gauge is used to monitor and maintain the GIE at the proper operating pressure over its service life, it would make sense to use this same gauge to determine whether the GIE is at the proper operating pressure at the beginning of the nameplate adjustment procedure.

The JUG's comments in the first 21-day changes to the SF6 regulation recommended having the option to determine the initial GIE temperature-compensated pressure using either the integrated temperature-compensated pressure gauge provided by the GIE manufacturer, or external pressure and temperature gauges. However, this requested change was not incorporated into the rule language. LADWP urges CARB to reconsider these two options, and supports the JUG comments on the second 15-day changes, which includes a detailed explanation for why both options should be allowed.

4) Section 95354(a)(10)(A)(6) Covered Insulating Gas at Activation (CIGAA) should apply to all GIE filled with gas during the data year to improve accuracy of the emission calculation, regardless of when the GIE was acquired.

For many years, LADWP has noticed discrepancies between the manufacturer estimated nameplate gas capacity value and the amount of gas needed to fill the GIE to proper operating pressure, for both older and brand new GIE. Since the nameplate gas capacity is used to calculate emissions, discrepancies between the actual gas fill amount and the nameplate gas capacity value will skew the calculated emissions.

LADWP supports the concept of establishing a more accurate nameplate capacity value based on the actual gas fill or "covered insulating gas at activation" (CIGAA). Use of the CIGAA value as the nameplate gas capacity value in the emission calculation, instead of the estimated gas capacity provided by the GIE manufacturer, will improve accuracy of the calculated emissions. However, the rule language limits applicability of CIGAA to only GIE acquired after 12/31/21 and made active for the first time after 12/31/21. This limitation means that brand new GIE acquired in a previous year, will have to use the less-accurate manufacturer estimated nameplate gas capacity in the emission calculation, instead of the measured amount of gas used to fill the GIE. This unequal treatment of new GIE based solely on the date the GIE was acquired does not utilize the best and most accurate data available, and could result in the calculation of inaccurate emissions

The addition of both CIGAA and the Nameplate Capacity Adjustment procedure to the SF6 regulation can make a significant improvement in the accuracy of nameplate capacity data used in the emission calculation. Since the annual emission limit is now at one percent (1%), the accuracy of data used in the emission calculation is important.

The JUG's comments on the 21-day changes recommended expanding the use of CIGAA to apply to any GIE filled with gas and activated for the first time, as well as GIE refilled with gas after maintenance work, regardless of when the GIE was acquired. However, this requested change was not included in the second 15-day changes version of the rule language. LADWP requests that CARB consider including this recommended change that would improve accuracy of the calculated emissions.

5) Section 95354.1 Calculating Annual Emissions – the terms of the equation need to be refined to capture all gas acquisitions and disbursements, and clarify the net increase in nameplate capacity term

LADWP believes that refinements to the terms of the emission calculation equation are necessary in order to correctly calculate emissions. As currently written, the acquisitions and disbursements terms do not capture all the ways that gas can be acquired or disbursed, and it is unclear how adjusted nameplate capacity values determined using the Nameplate Capacity Adjustment procedure in section 95357.2 fit into the net increase in nameplate capacity term.

The JUG's comments on the 21-day changes spelled out specific revisions that would have resolved these concerns. However, these requested refinements were not addressed in the second 15-day changes version of the rule language.

Regarding the acquisitions and disbursements terms, CARB staff advised that movement of gas cylinders belonging to the same entity from a facility inside California to a facility outside of California and vice versa, should be treated as gas sent to other entities or gas acquired from other entities. LADWP disagrees with this interpretation and does not believe it is consistent with the current rule language. LADWP has facilities in California and Nevada, and gas cylinders that move between these facilities should be treated as an acquisition or disbursement for purposes of the CARB report, which is limited to the geographic boundaries of California. Movement of gas cylinders between LADWP's facilities in California and Nevada are not sent to an "other entity".

Regarding the net increase in nameplate capacity term, CARB staff advised that the adjusted nameplate capacity values determined using the Nameplate Capacity Adjustment procedure fall into the "covered insulating gas j at activation for GIE removed from regular use during the data year pursuant to section 95354(c)(1)" category. "Covered insulating gas at activation" represents filling the GIE with gas before placing it into service, so it is confusing to use the same term to mean the amount of gas extracted from a GIE that is taken out of service. This rule language is not self-explanatory and requires the user to refer to two different definitions to figure it out. The JUG recommended substituting the language "Covered Insulating Gas at Removal" defined as "the nameplate capacity value determined using the nameplate adjustment procedure in section 95357.2; or the design capacity of the GIE device specified by the manufacturer". The JUG's suggested language would make the rule language easier to understand and implement, and therefore, LADWP recommends that this change be made.

Also, in the net increase in nameplate capacity term, for GIE reactivated after being removed from regular use, both "removal from regular use" and "status change to active" refer to "during the data year", so it appears that both have to occur within the same data year. LADWP requests clarification of this language and the intent.

6) Section 95355 Reporting Requirements should address revisions to previously submitted reports

Over the past four years, CARB staff has implemented a quality assurance check of the annual SF6 reports, where CARB asks the reporting entity to explain any differences in GIE and cylinder inventory data between the current and previous annual reports, and correct any errors. This practice is beneficial to ensure the annual reports are correct and the most up-to-date best available information is utilized as is required per the certification statement.

This practice is similar in nature to verification of emission reports under CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR). Under the MRR, emission data reports undergo verification by an independent third-party that is accredited by CARB, where the verifier acts on behalf of CARB to review the emission reports, identify questions, ask the reporting entity to address the questions and correct any "correctable errors". The MRR enforcement language stipulates that CARB will not initiate enforcement action until after the verification timeframe has ended.

LADWP believes it would be beneficial to have a similar defined process for the quality assurance check of the annual SF6 reports, with the ability to fix correctable errors and submit a revised SF6 report to CARB within a given timeframe without enforcement penalty.

Conclusion

In conclusion, LADWP again wants to thank CARB for the opportunity to provide these comments and understands that there is a tight timeline to finalize this regulation. However, LADWP believes the details and concerns expressed in this letter are important and need to be addressed for successful implementation of this rule.

Thank you for your consideration of these comments. If you have any questions, please contact Ms. Andrea Villarin at (213) 367-0409 or Ms. Cindy Parsons at (213) 367-0636.

Sincerely,

Katherine Rubin

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