SF$_6$ & ALTERNATIVES
COALITION

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California Air Resources Board
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Via electronic submittal: https://www.arb.ca.gov/lispub/comm/bclist.php

Ms. Bylin,

The SF$_6$ & Alternatives Coalition (the Coalition) submits the following comments in response to the California Air Resources Board's (CARB) *Proposed Amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear* 15-day Text. We have been pleased with the willingness of CARB staff to work with industry to incorporate recommendations thus far and submit the following for CARB consideration to further clarify and improve the 15-day Text.

Tare Weight

We recommend revising the definition of Tare Weight to be more accurate, as follows:

"Tare weight" means the weight of an empty gas container ~~that when subtracted from the gross weight yields the amount of gas in the gas container~~, not including the container cap.

SF$_6$ Capacity of Replacement Parts

§95354 Inventory and Insulating Gas Procedures contains a range of information regulated entities must record. Subsection (a)(12)(B) would require regulated entities to record, for SF$_6$-containing replacement parts meeting certain criteria, the SF$_6$ capacity of the part. SF$_6$ Gas Insulated Equipment (GIE) manufacturers and other component suppliers do not measure capacity of specific parts and components, only of the final assembly which may have multiple components such as tanks and bushings that contain SF$_6$. Under current designs and test practices, most manufacturers do not measure the SF$_6$ capacity of each of these components independently, so this information is typically not available to regulated entities.

Though manufacturing tolerances may cause the new part to vary in the volume of SF$_6$ it contains as compared to its predecessor, this difference in isolation is highly unlikely to affect the nameplate value of the whole GIE to any material degree. Accordingly, there is no value in terms of accurate reporting for regulated entities to perform this exercise and we recommend deleting §95354(a)(12) in its entirety.

Inventory and Insulating Gas Procedures

§ 95355(f) contains accuracy and capability requirements for certain equipment that will be used by regulated entities to measure SF$_6$ quantities and/or perform nameplate adjustments. We support CARB

in prescribing requirements to ensure the accuracy of field readings, but propose one change from the 15-day Text below. We also note for CARB consideration, several instances where the requirements in the 15-day Text could result in a capital cost for regulated entities.

The word "Precision" should be removed from lines (2) and (3), and elsewhere in the 15-day Text where used in conjunction with "pressure gauge" and "temperature gauge." Use of this word to modify "pressure gauge" and "temperature gauge," respectively, adds no particular industry meaning or import, and could lead to different interpretations among regulated entities[1]. The certification requirements contained in the descriptive language provide ample clarity of the accuracy requirements and will ensure the accuracy of the values.

We note that § 95355(l) contains a requirement for regulated entities to recalibrate equipment. While we strongly support a requirement for equipment to be calibrated prior to initial use, it is important to point out that only some, but not all, brands/models of this equipment currently in use by regulated entities can be recalibrated by the users. Accordingly, if CARB intent is not to impose a potential capital cost on regulated entities vis-à-vis procurement of new equipment, we recommend adding throughout this subsection language clarifying that the requirement to recalibrate this equipment only applies where it is possible for the GIE owner to do so.

Similarly, we also note that the requirement in § 95355(f)(4) for gas carts used to perform nameplate adjustment procedures be "capable of recovering gas from the GIE device to a blank-off pressure of 3.5 Torr or less" could entail an additional capital cost for regulated entities. While most, if not all, regulated entities currently own gas carts, not all gas carts are capable of reaching the threshold of 3.5 Torr. Accordingly, under this requirement regulated entities would be forced to either procure new gas carts or invest in upgrading current gas carts. If CARB intent is to not impose an additional cost on regulated entities, we recommend removing that requirement.

Nameplate Capacity Accuracy Verification and Adjustment

The Coalition is pleased to see that the 15-day Text has new provisions in §95357.2 Nameplate Capacity Adjustments to allow regulated entities to adjust nameplates on existing SF_6 GIE to address nameplate inaccuracies. We fully support this concept as a regulatory tool to increase accuracy of the data collected by CARB.

Our support for this concept notwithstanding, we have concerns about the requirements outlined in this Section inasmuch as they would require a reporting entity to notify CARB of the intent to adjust a nameplate <u>prior to</u> performing the very process that is outlined in §95357.2(c). Note that this process is intended to be used to verify whether the nameplate capacity value is accurate and, if not, identify what the accurate value is. It is not clear why CARB thinks a utility will know whether there is a nameplate inaccuracy prior to verifying this vis-à-vis the outlined process.

Not only does the notification requirement presuppose the utility will know whether the rated nameplate is accurate without first verifying, but it will also lead to a multitude of notifications to CARB

[1] The SF_6 & Alternatives Coalition notes use of the terms "precision pressure gauge" and "precision temperature gauge" in its white paper entitled, *Recommended Processes to Support Accurate Reporting of SF_6 Emissions*. Use of the word precision was only intended to clarify for readers that the equipment should be accurate.

(under the provisions in §95357.2(a)(1)) of the intent to adjust accurate nameplates. In other words, we foresee scenarios where a regulated entity, suspecting an inaccurate nameplate but having no other way to verify, notifies CARB "…of the intention to perform the nameplate capacity adjustments" (§95357.2(a)) on a GIE but then, upon performing the process to verify nameplate accuracy, determines that the nameplate is accurate and therefore, is not in need of adjustment.

Overall, we understand CARB desire to receive notification when nameplates are adjusted. We also recognize the importance of CARB being apprised when regulated entities intend to perform a "system-wide" nameplate verification as per §95357.2(b). But we do not believe there is any added value in CARB knowing about potential adjustments on specific GIE before they occur.

Accordingly, we recommend that the language be revised in §95357.2 as follows to address the above concerns while preserving CARBs ability to serve in its oversight role. Changes below to the 15-day Text are reflected in legislative format but, for the sake of clarity, when a subarticle or subsection has been re-ordered and re-numbered with no other changes to the 15-day Text, legislative formatting was not applied.

§ 95357.2. Nameplate Capacity Verification and Adjustments.

(a) GIE owners who elect to adjust the nameplate capacity value specified by the manufacturer on the nameplate attached to the GIE device, or within the manufacturer's official product specifications, may do so by undertaking the following process.

(1) Record the initial system pressure and vessel temperature prior to removing any insulating gas using a ~~precision~~ pressure gauge meeting the minimum accuracy requirements of section 95354(f)(2) and a ~~precision~~ temperature gauge meeting the minimum accuracy requirements of section 95354(f)(3).

(2) Convert the initial system pressure to a temperature-compensated initial system pressure by using the manufacturer-specified temperature/pressure curve.

(3) If the temperature-compensated initial system pressure of the GIE device does not match the temperature-compensated design operating pressure specified by the manufacturer, add or remove insulating gas to/from the GIE device until the manufacturer-specified value is reached.

(4) Follow one of the following processes, depending on the methodology being used to measure the amount of gas recovered:

(A) Connect a mass flow meter between the GIE device and a gas cart; or

(B) Weigh the gas container being used to receive the gas and record this value.

(5) Recover insulating gas from the GIE device until five minutes after the pressure in the GIE device reaches the blank-off pressure.

(6) Record the amount of insulating gas recovered (pounds), either based on the reading from the mass flow meter, or by weighing the gas container that received the gas and subtracting the weight recorded pursuant to section 95357.2(c)(4)(B) from this value. The amount of gas recovered shall be the revised nameplate capacity for the GIE device.

(7) Record the final system pressure.

(b) GIE owners who elect to perform the process outlined in § 95357.2(a) on any SF_6 GIE must do so on all non-hermetically sealed SF_6 GIE the first time each device is removed from regular use pursuant to section 95354(c)(1) or during maintenance activities that require opening the gas compartment.

(c) GIE owners who perform the process outlined in § 95357.2(a) in accordance § 95357.2(b) must provide a one-time notification to CARB prior to performing the process on the first SF_6 GIE.

(d) GIE that fall into one or more of the categories listed in the subsections below are exempted from the requirement in § 95357.2(b):

(1) GIE with a voltage capacity less than or equal to 38 kV;

(2) GIE that are fully-charged GIE to which the GIE owner does not add or remove gas;

(3) GIE whose integrity have been compromised (e.g., due to damage to the gas containment vessel); or

(4) GIE that were acquired after December 31, 2021.

(e) GIE owners who perform the process outlined in § 95357.2(a) in accordance § 95357.2(b) must notify CARB of any resulting nameplate adjustments for each data year in which a nameplate is revised. The notification shall include:

(1) GIE owner name and ARB identification number (if assigned);

(2) Designated representative's name, official title, mailing address, phone number and email address; ~~and~~

(3) A list of the manufacturer serial numbers of the non-hermetically sealed SF_6 GIE subject to the nameplate capacity adjustment process per section 95357.2(a);

(4) The nameplate capacity value specified by the manufacturer on the nameplate attached to the GIE device, or within the manufacturer's official product specifications; and

(5) The revised nameplate capacity value.

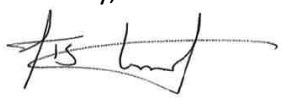
(f) If the GIE device will remain in active service, and the revised nameplate capacity value differs from the nameplate capacity assigned to the device prior to the adjustment, the GIE owner must affix a revised nameplate capacity label, showing the revised nameplate value and the year the nameplate capacity adjustment process was performed, to the device by the end of the calendar year in which the process was completed. The manufacturer's previous nameplate capacity label must remain visible after the revised nameplate capacity label is affixed to the device.

(g) For each GIE device whose nameplate capacity was adjusted during the data year, the revised nameplate capacity value must be used in all provisions wherein the nameplate capacity is required to be recorded, reported, or used in a calculation in this subarticle unless otherwise specified herein.

Closing

Thank you for this opportunity to provide further comments. Please contact me at jonathan.stewart@nema.org with any further questions.

Sincerely,



Jonathan Stewart
Industry Director, Utility Products & Systems
National Electrical Manufacturers Association, on behalf of
The SF_6 & Alternatives Coalition

About the SF_6 and Alternatives Coalition

Formerly named *The Electric Transmission & Distribution SF_6 Coalition*, the SF_6 & Alternatives Coalition is comprised of 17 members who are producers and distributors of SF_6 and SF_6 alternatives, manufacturers of gas-insulated equipment, a California utility, and other SF_6 stakeholders. Our mission is to:

1) provide a forum for equipment manufacturers using SF_6, SF_6 producers and distributors, and transmission and distribution equipment owners for discussion of environmental concerns of SF_6 as a greenhouse gas;

2) develop best practices and recommendations related to sustainable SF_6 usage in electric power transmission and distribution;

3) advocate the Coalition positions to federal, state, and local policy-makers;

4) educate public and private stakeholders on SF_6 alternatives; and

5) maintain liaisons with government and industry groups such as U.S. EPA, Institute of Electrical and Electronic Engineers (IEEE), EEI, IEC, CIGRE, and EPRI.