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Ms. Mary Jane Coombs
Chief, Project Assessment Branch
California Air Resources Board
1001 I Street
Sacramento, California 95814

via e-mail at energy@arb.ca.gov

Re: WSPA Comments on the February 25, 2019 CARB SF₆ Workshop

Dear Mary Jane,

The Western States Petroleum Association (WSPA) appreciates the opportunity to provide the following comments in response to the California Air Resources Board (CARB) staff presentation during the February 25, 2019 Workshop regarding Draft Amendments to the Regulation for Reducing Sulfur Hexafluoride (SF₆) Emissions from Gas Insulated Switchgear (SF₆ Workshop) and the Discussion Draft, dated February 22, 2019. WSPA is a non-profit trade association that represents companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California and four other western states.

General Comments

Phase-Out Applicability

WSPA believes that the automatic inclusion of fossil fuel producers, pipelines, and users in the SF₆ regulation amendments (specifically, the phase-out aspect) puts some of California's most critical infrastructure at risk. In an April 25, 2001 filing of "Comments of the California Energy Commission (CEC) on Decision 01-04-006, Relative to Fossil Fuels and Rotating Outages"¹, the CEC determined: "*Essential use status for all fossil fuels is necessary to protect the public health and welfare*". In its recommendations, CEC requested the California Public Utility Commission (CPUC) to exclude fossil fuel producers, pipelines, and users from "*coordinated interruptions [of electricity], to the extent feasible*".

Stable, safe, and reliable electricity supply to a refinery and electricity distribution within a refinery are critical not only to avoiding operational interruptions but also in maintaining stable and safe refinery operation. Even momentary electricity supply disruption can trigger shutdowns of sensitive equipment which can take days to recover from and return to stable operation. Reliable delivery of gasoline, jet fuel, and diesel to California consumers requires reliable and proven electricity supply using reliable and proven equipment.

WSPA strongly recommends that CARB take a more systematic and logical pathway to phase out the use of SF₆. Specifically, it is recommended that CARB take a phased approach to this

¹ https://www.energy.ca.gov/papers/2001-04-25_PUC_DEC01-04-006.PDF

regulatory change, based on critical versus non-critical equipment such that it provides the time needed to develop the new technologies and learn about the new technologies.

In moving forward in this manner, critical infrastructure will not be subject to the initial uncertainties related to the new technology (i.e., uncertainties created by CARB's current choice to phase out equipment based on voltage rather than potential emissions). This approach is further reinforced when considering cost-effectiveness balanced against the potential scale of reductions as industry and small utilities comprise less than 5% of California's SF₆ emissions and these SF₆ emissions represent less than 0.001% of California's total CO₂e emissions^{2,3}.

Non-SF₆ GIE Availability

As shown in the previously-cited USEPA/PG&E presentation, technology development for utility-based applications is still ongoing. In fact, PG&E indicates "pilot studies" (not non-SF₆ GIE ready for commercial application) for the typical equipment capacities found in the oil & gas sector no earlier than 2022-2026. The compliance schedule identified by CARB staff and provided in the Discussion Draft reflects that anticipated (aspirational) utility-based technology development. WSPA believed that non-utility applications should only follow after utility adoption since the equipment for non-utility based applications are part of contract and hook-up agreements with the utilities. Non-utilities should not launch new technologies that have not been widely adopted by its host utility pursuant to the appropriate vetting (i.e., verification of reliability, operability, and safety) to avoid incurring undue risk and uncertainty.

While manufacturers may be in some stage of device development (for what appears to be utility applications), WSPA member companies do commonly require multiple qualified equipment vendors that meet safety, technical and reliability standards, in order to have competitive bidding. At this time, this criterion does not appear to be achievable by vendors.

WSPA believes that until there are multiple manufacturers that can provide commercially-proven GIEs for various capacities and adaptable to the built-for-purpose criteria of the non-utility sectors, CARB should withdraw the non-utility sector from the regulation amendment until the compliance schedule for non-utility GIE use is supported by commercially-proven technology.

Annual Emissions Limit

The annual emissions limit included in § 95352.2 appears to start at 1% of the average CO₂e capacity, and then is eventually capped at 0.6% of the capacity after 2049. As noted in prior comments, this creates a disincentive for covered entities to replace existing SF₆ GIS equipment as that will reduce their annual emissions limit (and associated pounds of SF₆ limit). WSPA encourages CARB to consider allowing facilities to cap the annual emissions limit to 2% of their 2019 CO₂e capacity as this will already be a very small emissions limit given the SF₆ capacity of most non-utility facilities. Anything lower could result in extremely small emission limits that could be exceeded by the smallest of emission leaks. Hypothetically, a facility at 6,000 metric tons CO₂e would have an emissions limit of 3.6 MT CO₂e, which is approximately 0.35 lbs of SF₆.

² https://www.arb.ca.gov/cc/inventory/doc/docs2/2g1b_instategenerationtransmissionanddistrib_electricitytransmitted_sf6_2016.htm

³ <https://www.arb.ca.gov/cc/inventory/data/data.htm>

Technical Infeasibility Exemption

WSPA appreciates CARB staff inclusion of the Technical Infeasibility Exemption in the SF₆ regulatory approach. This aspect of the amended regulation will be extremely important, considering the potential limitation of to-be-developed non-SF₆ GIEs for non-utility applications. WSPA agrees with the conditions identified on Slide 7 of the CARB staff presentation at the workshop (equipment available, size, electrical compatibility, safety, reliability). To ensure that this exemption process is robust, WSPA recommends that conditions also include cost effectiveness criteria such as that suggested by the Electric Transmission & Distribution SF₆ Coalition⁴. In that way, the regulation would provide the necessary strong incentive for manufacturers of non-SF₆ GIE to provide cost-effective alternatives.

Emergency Event Exemption

Similar to the Technical Infeasibility Exemption, it is essential that the criteria for an Emergency Event Exemption be robust. In the oil & gas sector, loss of use of any GIE (i.e., equipment failure) may constitute an emergency event. If there is a failure of a circuit switcher pole or loss of SF₆ on power circuit breakers, immediate action to replace/refill the GIE is essential. WSPA believes such situations need to be clearly identified in the Discussion Draft.

Specific Comments

§ 95351. Definition

With regard to the definition for "Emergency Event", WSPA requests that equipment failure and electrical fault be added to this definition.

With regard to the definition for "Gas-Insulated Equipment Owner" or "GIE Owner", WSPA suggests the removal the word "original" from this definition. The original equipment manufacturer may no longer provides parts or service to the circuit switchers

With regard to the definition for "Non-Hermetically Sealed Gas-Insulated Equipment" or "Non-Hermetically Sealed GIE", WSPA requests that the definition language be changed to "fillable by the GIE Owner or third-party designee".

§ 95352. Sulfur Hexafluoride Phase Out

In § 95352(a), WSPA suggests that CARB change the first line from use of SF₆ GIE to use of utility owned SF₆ GIE. The non-utility schedule should be developed only after utility installation.

In § 95352(a)(1)(A), WSPA requests that CARB confirms that a GIE owner can purchase the gas (not GIE) to replace gas needed for non-hermetically sealed equipment.

With regard to § 95352(a)(2), it would be useful to provide an example of an acceptable label or confirm use of OSHA material labeling requirements.

⁴https://www.arb.ca.gov/cc/sf6elec/letters/nema_phaseout20180321.pdf?_ga=2.25929917.1601673175.1555638613-1243356117.1551467492

§ 95353. Reporting Requirement

In § 95353(c), CARB should include reference to 40 CFR 98.4 to ensure consistency with federal and other CARB reporting requirements for a designated representative along with clarifying specific criteria for the designated representative to follow.

In § 95353(f)(4), equipment types listed include: busbar, bushings, capacitor, circuit breaker, GIS, switch, transformer, and other. The term “GIS” is no longer defined in the Discussion Draft and needs to be added back into § 95351 (Definitions).

In § 95353(g), it is stated that “The annual report must contain a current and complete inventory of gas containers owned by the GIE owner, stored on the property of the GIE owner, or used by the GIE owner to transfer insulating gas into or out of the GIE owner’s GIE, ...” We suggest that any reference to “GIE owner” be modified to read “the GIE owner or third-party designee” to acknowledge that GIE equipment may be stored or operated by a third-party designee.

§ 95355.2 – Nameplate Capacity Adjustments

As an additional element of this potential new section, WSPA recommends that GIE owners be allowed to determine which GIE that should be evaluated for a Nameplate Capacity Adjustment. Further, GIE owners should also be allowed to determine when a GIE is to be evaluated.

§ 95355.3. Technical Infeasibility Exemption

It is not clear in this section whether operators will be able to purchase SF₆ gas and refill existing equipment after the phase out dates. WSPA requests that CARB formally verify that SF₆ gas can be purchased after the phase-out dates to refill existing equipment.

With regard to § 95355.3(a)(2), WSPA requests additional clarity as to what information is necessary to prove that the new GIE cannot meet size requirements. Note that new GIE may not be an exact replacement in-kind (i.e., dimensions). The duration of the GIE being out of service to make modifications to accept the non-RIK GIE may reduce the electrical reliability of the GIE owner’s facility.

With regard to § 95355.3(a)(9)(A), WSPA recommends that the language be changed as follows: “...*the specific requirement(s) that cannot be met (e.g., voltage, short-circuit amperage rating, footprint, height, width, weight and other dimensions, connection locations, clearance requirements, control wiring changes, construction infeasibility due to safety/physical barriers)*”.

As previously noted in this letter, a cost-effectiveness criterion is essential to a robust technical infeasibility exemption evaluation process.

95355.4. Emergency Event Exemption

In § 95355.4(b)(2)(A), WSPA recommends that the language be changed as follows: “*The nature of the event (e.g., fire, flood, earthquake, equipment failure or electrical fault)*”.

In § 95355.4(b)(3), WSPA suggests that CARB outline the type of supporting documentation that will meet the requirements of this section.

Recommended Path Forward

WSPA believes that the following key elements need to be considered in any SF₆ regulation amendment:

- Stable, safe, and reliable electricity supply in and to a refinery is critical to refinery operations. Even momentary electricity supply disruption can trigger shutdowns which can take days to recover from and return to stable operation, thus potentially impacting delivery of gasoline, jet fuel, and diesel to California consumers.
- Basing the phase-out program on equipment capacity is much more meaningful in terms of potential emissions than total voltage.
- Potential SF₆ emissions from the non-utilities sector (including refineries) are very small relative to potential emissions from the utility sector. Industry and small utilities comprise less than 5% of California's SF₆ emissions and these SF₆ emissions represent less than 0.001% of California's total CO₂e emissions.
- Phase-out of SF₆ equipment for the non-utility sector should follow, not precede the utility sector to ensure verification of reliability, operability, and safety while avoiding incurring undue risk and uncertainty.

For these reasons, WSPA recommends that CARB withdraw the non-utility sector from the regulation amendment until non-SF₆ technology installations are commercially proven in the utility sector with widespread applications.

WSPA appreciates the opportunity to provide feedback on the SF₆ workshop and the Discussion Draft. If you have any questions, please contact me at (805) 701-9142 or via email at tom@wspa.org.

Sincerely,

