



Final Statement of Reasons for Rulemaking
Including Summary of Comments and Agency Responses

**PUBLIC HEARING TO CONSIDER THE ADOPTION OF A PROPOSED
REGULATION FOR REDUCING SULFUR HEXAFLUORIDE EMISSIONS FROM GAS
INSULATED SWITCHGEAR**

Public Hearing Date: February 25, 2010
Agenda Item Number: 10-2-2

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State of California
AIR RESOURCES BOARD

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Agenda Item No.: 10-02-02

I. GENERAL

In this rulemaking, the Air Resources Board (Board or ARB) adopted a new regulation to reduce greenhouse gas (GHG) emissions from the electricity sector. Specifically, the regulation will significantly reduce sulfur hexafluoride (SF₆) emissions from gas insulated switchgear (GIS).

This rulemaking was initiated by the January 7, 2010, publication of a notice for a public hearing on February 25, 2010 (45-day Notice). The "Staff Report: Initial Statement of Reasons for Proposed Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear" (Staff Report) was also made available for public review and comment starting on January 7, 2010. The Staff Report, which is incorporated by reference herein, describes the rationale for the proposal. Appendix A of the Staff Report contained the text of the proposed regulation and adds new sections 95350 to 95359, title 17, to the California Code of Regulations (CCR). The hearing notice and Staff Report were also posted on the ARB internet site for the rulemaking at: <http://www.arb.ca.gov/regact/2010/sf6elec/sf6elec.htm>.

At the February 25, 2010, hearing, the Board received written and oral comments on the staff's proposed regulation. At the conclusion of the hearing, the Board unanimously adopted Resolution 10-1, in which it approved the adoption of the originally proposed regulation with suggested modifications discussed at the hearing. In accordance with section 11346.8 of the Government Code, the Board directed the Executive Officer to incorporate the modifications into the proposed regulatory text and to make such modifications available for a supplemental comment period of at least 15 days. The Executive Officer was then directed either to adopt the regulations with such additional modifications as may be appropriate in light of the comments received, or to present the regulations to the Board for further consideration if warranted in light of the comments.

The text of the modifications to the originally proposed regulation were made available for a supplemental 15-day comment period by issuance of a "Notice of Public Availability of Modified Text and Availability of Additional Documents" ("15-day Notice").

The 15-day Notice, together with a copy of the proposed regulation with modifications clearly indicated, was posted on September 9, 2010, for a period of public review and comment that ended on September 24, 2010. Notification was sent to persons who had expressed an interest in the regulation during the course of rule development and review, including all individuals described in subsections (a)(1) through (a)(4) of section 44, Title 1, CCR. By these actions, the modified regulations were made available to the public for a supplemental comment period pursuant to Government Code section 11346.8.

Three written comments were received during the supplemental 15-day comment period. Staff did not make additional modifications in response to those comments, except to correct a clerical error.

After considering the comments, the Executive Officer issued Executive Order R-10-020, adopting new sections 95350 to 95359 to title 17, CCR.

This Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed regulatory text as a result of public comment and staff analysis after the Staff Report was issued. This FSOR also summarizes written and oral comments the Board received on the proposed regulatory text during the rulemaking process and the ARB's responses to those comments.

Economic and Fiscal Impacts

Pursuant to Government Code sections 11346.5.(a)(5) and 11346.5.(a)(6), the Executive Officer has determined that the regulatory action will create costs to some local agencies. There are 54 public entities affected by the proposed regulation. The entities include 50 publicly-owned utilities, irrigation and utility districts, water agencies and ports; one State entity (Department of Water Resources); and three Federal entities (U.S. Department of Energy, U.S. Department of Defense, and U.S. Department of the Interior).

The total estimated cost for the 50 publicly-owned utilities, irrigation and utility districts, water agencies and ports to implement this regulation ranges between \$700,000 and \$1 million. The total estimated cost of the regulation ranges from \$18,000 to \$26,000 for the one affected State entity (Department of Water Resources) and from \$14,000 to \$20,000 for all Federal Government entities combined.

The fiscal impact is defined as the costs incurred to the local and state agencies in the three fiscal years starting with the 2010/2011 fiscal year. Of the approximately 50 local publically owned electrical utilities (POUs) affected by the proposed regulation, 13 reported SF₆ emissions under ARB's mandatory greenhouse gas reporting program, which formed the basis for the fiscal analysis. Although each entity's emission reduction cost will differ based on the extent of their service territory and size of their

GIS inventory, under the assumptions used for ARB's cost estimation method, POUs are expected to experience a savings of approximately \$365 during fiscal year 2010/2011 and \$350 during fiscal year 2011/2012. These compliance cost savings are expected because the savings from using less SF₆ gas will be greater than the cost to reduce an entity's SF₆ emissions. However, in fiscal year 2012/2013, compliance is expected to have an estimated cost of \$70 per POU.

The one affected state government agency (Department of Water Resources) is expected to experience a savings of approximately \$415 for fiscal year 2010/2011 and \$350 for fiscal year 2011/2012. In fiscal year 2012/2013, DWR is expected to have a cost of approximately \$270.

Additional reporting and recordkeeping costs are expected to range from \$480 to \$1,920 per regulated party for the first year of implementation and \$240 to \$960 annually per regulated party in subsequent years.

In general, entities are expected to experience a cost savings or have no cost during the initial years of the ten year regulatory period. Costs are expected to continue to be minimal until the final three years of the regulation (2018 – 2020). During the initial years of the regulation, costs may be offset by savings from reductions in SF₆ usage, absorbed within current operating costs or, if needed, passed on to electricity consumers. If the cost of the measure is passed on to consumers, it will increase electricity rates by approximately \$0.000016 to \$0.000025 per kilowatt-hour. This equates to an increase from one to one and one-half cents per month for the average residential electricity bill.

Costs of the proposed regulation are approximately apportioned among affected categories as follows: approximately 85 percent to investor-owned utilities; approximately 15 percent to publically-owned utilities (local government entities); and less than one percent to state government, federal government, and industrial self generators.

Consideration of Alternatives

The proposed regulation was the subject of discussions involving a technical working group consisting of ARB staff, investor-owned utilities, industrial self generators/cogenerators, merchant electricity generators, publicly-owned utilities, irrigation districts, water agencies, state entities, federal entities, and others. A discussion of three alternatives to the regulatory proposal is found in the "Alternatives Considered" section on pages 10 -11 of the Staff Report. ARB staff recommended against all three alternatives.

The three alternative regulatory approaches were: 1) no action, 2) establishing an SF₆ emission reduction measure for GIS and particle accelerators, or 3) establishing performance and equipment standards.

The first alternative, “No Action,” would be to forego adopting the proposed regulation. This alternative would have no cost to business but would allow emissions to continue at current levels or increase.

The second alternative that ARB staff considered was “Establishing an SF₆ Emission Reduction Measure for GIS and Particle Accelerators.” Because GIS and particle accelerators use SF₆ for similar purposes, an SF₆ emission reduction measure was proposed within the Scoping Plan which included both applications. During the regulatory development process, ARB staff toured several particle accelerators including those used for cancer radiation treatment and physics research, which represent the majority of the State’s particle accelerator inventory. Particle accelerators are also used within scanning equipment by U.S. Customs and the military. Staff found that particle accelerators use and emit very small amounts of SF₆. For example, at one medical center’s radiation treatment facility, a five-pound container of SF₆ was still in use after a five-year period. Staff determined that imposing reduction standards beyond those already achieved would be costly and burdensome for these applications. On-site substations which power particle accelerators at national laboratories would still be subject to the proposed regulations.

The third alternative considered by ARB staff was “Establishing Performance and Equipment Standards.” Staff evaluated the option of establishing performance standards and mandating the replacement of medium voltage (<69 kilovolt (kV)) switchgear. Staff also evaluated the requirement of establishing standards for new equipment. Performance standards for training, emission notification equipment, and 24-hour repair requirements were also considered. Technical working group members commented that this alternative was infeasible and provided information to substantiate this position. One utility would have been required to substitute non-SF₆ equipment for nearly 2,000 circuit breakers. The cost of replacing each breaker exceeded \$50,000—totaling over \$100,000,000. Although this substitution would have resulted in reducing an extra 480 pounds of SF₆ (5,200 MTCO₂e) from this utility relative to the proposed regulation, the reductions were cost-prohibitive relative to the benefits derived. The development of these standards would be time and resource intensive and the resulting regulations would be burdensome to implement and enforce.

The Board has determined that no other alternatives considered by the agency or that have otherwise been identified and brought to the attention of the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

Various modifications were made to the original proposal to address comments received during the 45-day public comment period and to clarify the regulatory language. These modifications are described below. The 15-day Notice, together with a copy of the proposed regulation with changes indicated, was posted on September 9, 2010, for a period of public review and comment that ended on September 24, 2010.

The following is a description of the substantive modifications provided for public comment, arranged by section number. Modifications were made to proposed sections 95351, 95353, 95354, 95355, and 95356, title 17, CCR.

Definitions: Section 95351

In response to public comments, the definitions for the terms “active GIS equipment,” “emergency event,” “emission rate,” and “hermetically sealed gas insulated switchgear” were amended for clarity.

Emergency Event Exemption: Section 95353

In response to public comments, the emergency event exemption in section 95353 was modified so that the exemption may be requested from the Executive Officer throughout the regulatory period rather than beginning January 1, 2020.

SF₆ Inventory Measurement Procedures: Section 95354

The effective date of the requirement to develop procedures (January 1, 2011) was added for clarity.

In response to public comments, the requirement in subsection (a)(1) to weigh containers as they enter and leave storage, has been removed. Additionally, subsection (a)(2) has been amended to clarify that scale manufacturers are responsible for certifying scale accuracy.

Recordkeeping: Section 95355

The effective date of the requirement to establish and maintain a GIS equipment inventory (January 1, 2011) has been added for clarity.

The first sentence of subsection (a) has been amended to clarify that the inventory information must address individual pieces of GIS equipment.

In response to public comments, new subsections (a)(8) and (a)(9) have been added to require recordkeeping for the amount of SF₆ transferred into and out of active GIS.

Consistent with proposed amendments to section 95354 (a)(1), the subsection (b)(4) requirement for a chronological accounting of SF₆ transfers from containers has been amended; and the subsection (b)(5) requirement to record SF₆ residual within containers has been deleted.

Annual Reporting Requirements: Section 95356

In response to public comments, the effective date for submitting annual reports in subsection (a) has been changed from 2011 to 2012.

The cross references to section 95355 in subsections (b)(8) and (b)(9) have been amended to be consistent with numbering changes made to section 95355.

References to the “ARB Greenhouse Gas Reporting Tool” in subsections (c)(1) and (c)(2) have been expanded to include “other mechanisms.” The reference to title 17, California Code of Regulations, section 95104(e) has been amended to more broadly reference all of section 95104.

In response to public comments: 1) the phrase “non-hermetically sealed” in subsection (d) has been changed to “active” to be consistent with the proposed definition for “active GIS;” 2) the term “operated” has been corrected to reference “owned” GIS equipment; and 3) the phrase “or other entities” has been added to the list of bulk SF₆ supply sources.

Because the term “nameplate capacity” is defined in the definitions section of the regulation, the parenthetical “note” in the last sentence of subsection (d) has been deleted.

Other Non-Substantive Changes

Additionally, minor modifications were made throughout the regulatory text to improve clarity, to correct typographical or grammatical errors, and to make changes in numbering or formatting. These modifications were included in the strikeout/underline version of the regulatory text that was provided for public comment with the 15-day Notice.

III. SUMMARY OF COMMENTS RECEIVED DURING THE 45-DAY COMMENT PERIOD AND AGENCY RESPONSES

The Board received numerous written and oral comments during the 45-day rulemaking comment period (January 7, 2010 to February 25, 2010). A list of commenters is set forth in Table I below, identifying the date and form of all comments that were submitted during the 45-day comment period. Following the list is a summary of each objection or recommendation made regarding the proposed action, together with an explanation of how the proposed action has been changed to accommodate the objection or recommendation, or the reasons for making no change. The comments have been grouped by topic. Comments were received from investor-owned utilities, publicly-owned utilities, industry representatives, individuals, and environmental organizations supporting and objecting to specific terms of the proposed regulation. Suggestions received ranged from encouraging early reductions to diminishing the enforcement penalties.

Table I: Comments Received During the 45-day Comment Period

| <u>Abbreviation</u> | <u>Commenter</u> |
|---------------------|---|
| Eaton1 | Fred Paul Eaton Corporation Written testimony: February 16, 2010 |
| Eaton2 | Fred Paul Eaton Corporation Oral testimony: February 25, 2010 |
| Gudorf | Matthew Gudorf Written testimony: January 23, 2010 |
| Joint Utilities | Susie Berlin McCarthy & Berlin, LLP for the "Joint Utilities:" Northern California Power Agency Pacific Gas and Electric Company Sacramento Municipal Utility District San Diego Gas and Electric Company Southern California Edison Company Southern California Public Power Authority Written testimony: February 24, 2010 |
| LADWP | Cindy Parsons Los Angeles Department of Water and Power Oral testimony: February 25, 2010 |
| NCPA | Susie Berlin McCarthy & Berlin, LLP Northern California Power Agency Oral testimony: February 25, 2010 |

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|-------------|--|
| NEMA | Kyle Pitsor National Electrical Manufacturers Association Written testimony: February 12, 2010 |
| NextERA | Kyle Boudreaux NextERA Energy Resources Written testimony: February 24, 2010 |
| PacifiCorp1 | Kyle Davis PacifiCorp Written testimony: February 22, 2010 |
| PG&E | Wendy Mitchell Pacific Gas and Electric Oral testimony: February 25, 2010 |
| SCE1 | Richard Tom and Kelly O'Donnell Southern California Edison Written testimony: February 24, 2010 |
| SCE2 | Victor Yamada Southern California Edison Oral testimony: February 25, 2010 |
| SCPPA1 | Norman A. Pedersen and Lily Mitchell Southern California Public Power Authority Written testimony: February 16, 2010 |
| SCPPA2 | Norman A. Pedersen and Lily Mitchell Southern California Public Power Authority Written testimony: February 24, 2010 |
| SCPPA3 | Lily Mitchell Southern California Public Power Authority Oral testimony: February 25, 2010 |
| SMUD | Tim Tutt Sacramento Municipal Utilities District Oral testimony: February 25, 2010 |

A. Exemption Thresholds

A-1. Comment: Add an exemption threshold to the applicability requirements (section 95350(b)) so that the regulation applies only to “owners of *active* gas insulated switchgear *that totals over 5,000 pounds of nameplate capacity.*” This would effectively exempt small utilities, including PacifiCorp. (PacifiCorp1)

Response: Because SF₆ is the most potent of the six main greenhouse gases, smaller sources of SF₆ emissions, such as the smaller utilities, could cause significant GHG emissions. Consequently, ARB staff did not include an exemption threshold in the proposed regulation. Specifically, an exemption level based on nameplate capacity of active GIS would be impractical, as SF₆ emissions are not limited based on GIS capacity.

ARB staff believes that regulated entities, including small utilities, will be able to meet the proposed emission rates using currently available, cost-effective technologies. The emission rate standards are phased in with a one percent reduction per year from 2011 to 2020. ARB’s survey of GIS owners coupled with actual SF₆ emission data received from affected entities under ARB’s mandatory GHG reporting regulation indicated that these GIS owners have an average SF₆ emission rate of seven percent (the proposed 2014 emission rate), with some entities already meeting the proposed 2020 emission rate.

A-2. Comment: Add an exemption threshold for small SF₆ equipment that is sealed, similar to the exemption that exists for partners in the EPA Voluntary Partnership Program. (NextEra)

Response: The exemption in the proposed regulation of hermetically sealed GIS equipment from the annual SF₆ emissions calculations addresses this concern.

A-3. Comment: Small, sealed sources containing less than 15 pounds of SF₆ should not be included in the reporting inventory or included in the calculation of leakage rates. The tracking of this smaller equipment is unnecessary and the potential benefit to the reductions of the emissions would be relatively insignificant. (NextEra)

Response: Staff disagrees. Regulated parties will be required to inventory all GIS equipment, including those hermetically sealed, and report the information to the ARB. Having a complete inventory of all GIS equipment will allow the ARB to track regulated parties’ practices for using or switching to hermetically sealed equipment. The information will be used to evaluate the impact of these practices on SF₆ emissions from this industry sector, and determine if future changes may be needed to the regulation.

B. Definitions

B-1. Comment: The draft rule does not define “low-voltage” electrical circuit breakers. It is implied in the material that low voltage is 70 kV or below. If that is the case, it should be clarified to be circuit breakers rated at 70 kV or below, not the actual operating voltage. We currently use 72.5 kV rated SF₆ circuit breakers commercially available for use by 60 kV or 46 kV systems. (PacifiCorp1)

Response: ARB staff believes that the commenter is referring to preliminary draft language that was discussed at technical working group meetings. This language was not carried forward into the proposed regulation. Because the term “low-voltage electrical circuit breakers” is not used in the regulations, a definition of this term is unnecessary.

B-2. Comment: The definition of “Active GIS Equipment” should include in-service GIS equipment that is de-energized and fully charged spare equipment. Modify section 95351(a)(1) as follows: “‘Active GIS Equipment’ means in-service non-hermetically sealed SF₆ gas insulated switchgear that is actively connected (i.e., interconnected through busbars or cables which are actively conducting electricity) to the GIS owner’s electrical power system, or that is kept fully-charged and ready for service. ‘Active GIS equipment’ does not include equipment in storage.” (SCPPA1)

B-3. Comment: The definition of “Active GIS Equipment” should be revised to allow for in-service equipment that is connected to the system, and equipment that is fully charged and kept on-site ready for service, and that employs a monitoring mechanism the type of which is left to the discretion of the regulated entity. Modify section 95351(a)(1) as follows: “‘Active GIS Equipment’ means in-service non-hermetically sealed SF₆ gas insulated switchgear that is connected (i.e., interconnected through busbars or cables which are actively conducting electricity) to the GIS owner’s electrical power system, or that is kept fully-charged and on-site ready for service, and which employs a mechanism to monitor potential emissions. ‘Active GIS equipment’ does not include equipment in storage.” (Joint Utilities)

Response: ARB staff agrees and has modified the definition of “Active GIS Equipment” to address the comments. The exact language suggested by the commenters was not used; the language chosen by ARB staff does what the commenters have requested but is clearer than the suggested language.

B-4. Comment: The emergency event definition should be expanded. Modify section 95351(a)(2) as follows: “‘Emergency Event’ means a situation arising from a sudden and unforeseen natural disaster event, including, but not limited to, such as an earthquake, flood, or fire.” (Joint Utilities)

B-5. Comment: Section 95351(a) should be revised as follows: “Emergency Event’ means a situation arising from a sudden and unforeseen event, or an event unpreventable by the GIS owner, such as a natural disaster (such as an earthquake, flood, or fire), an act of war or an act by a public enemy, or a civil disorder or riot.” (SCPPA1)

B-6. Comment: Broaden the emergency event exemption to include instances of impending electrical outages. (SMUD)

Response: ARB staff agreed and modified the definition of “emergency event” to clarify that emergency events claimed by an owner are not limited to those related to natural disasters.

B-7. Comment: The “emissions rate” definition refers to “total SF₆ nameplate capacity,” but this term is not defined and section 95356(e) uses the term “average system nameplate capacity” in the emission rate calculation. The proposed regulation should be revised to make this definition and the calculation description consistent. Modify section 95351(a)(3) as follows: “Emission rate’ means, subject to the provisions of section 95356(e), a GIS owner’s total annual SF₆ emissions from all active GIS equipment divided by the total average system SF₆ nameplate capacity of all active GIS equipment.” (Joint Utilities)

Response: ARB staff agreed and modified the definition of “emissions rate” to clarify that the average annual SF₆ nameplate capacity must be used in the emission rate calculations.

B-8. Comment: Recommend revising the definition of “GIS” to mean “...all electrical power equipment that is insulated with SF₆ gas *and hermetically sealed* regardless of location.” The hermetically sealed wording is used on “active GIS equipment” and should be used here as well. (PacifiCorp1)

Response: ARB staff disagrees. GIS equipment is primarily non-hermetically sealed. Consequently, limiting the regulation to hermetically sealed equipment would exempt most GIS equipment in California and the associated SF₆ emissions. In addition, “active GIS” in the regulation refers to non-hermetically sealed equipment, not hermetically sealed equipment.

B-9. Comment: The definition of “GIS Owner” is adequate as currently written. (NEMA)

Response: Comment duly noted.

B-10. Comment: As currently written, the definition of hermetically sealed [“Hermetically Sealed Gas Insulated Switchgear”] is open to interpretation. In the absence of additional exclusions (i.e., pre-charged with gas, sealed at the factory, and not user-refillable) this definition could be interpreted to cover a

broad range of switchgear models. If the intent of the ARB is to narrow the scope of the exemption for hermetically sealed devices, NEMA would recommend a precise definition. The ARB may consider including the additional exclusions as described above. (NEMA)

Response: ARB staff agreed and worked with the commenter to more narrowly define “Hermetically Sealed Gas Insulated Switchgear” to include only switchgear that is pre-charged with SF₆, sealed at the factory, and not refillable by its user. The modified definition was included in the regulation and made available during the 15-day comment period.

C. Maximum Annual SF₆ Emission Rate

Emission Rates Unrealistic

C-1. Comment: A maximum annual SF₆ emission rate of one or two percent is unrealistic and possibly even beyond the available seal technology and operational characteristics of the equipment. A maximum annual SF₆ emission rate of one percent by 2020 may also not be achievable because while new equipment sold by vendors may initially have a guaranteed leakage rate at this level, as equipment ages, leaks tend to increase and manufacturer warranties do not apply. The current average annual emission rate for utilities enrolled in the U.S. Environmental Protection Agency SF₆ Reduction Partnership is around six percent and many utilities have been working toward this goal for many years. (PacifiCorp1)

Response: ARB staff disagrees. Cost-effective technologies are available today to control SF₆ emissions from GIS equipment to the proposed emission rates. ARB’s survey of GIS owners coupled with actual SF₆ emission data received from affected entities under ARB’s mandatory GHG reporting regulation indicates that some entities are already meeting the proposed 2020 emission rate of one percent. Because the one percent emission rate is currently being achieved by some affected parties and cost-effective, technically feasible equipment is readily available, all regulated parties are expected to be able to meet this standard by 2020.

C-2. Comment: A one percent SF₆ emission rate is beyond the inherent accuracy of the current measuring systems used to track emissions. PacifiCorp currently has about 1,800 pounds of SF₆ gas in use within California – one percent is equivalent to 18 pounds which is about 1/6th of a cylinder. Trying to manage an inventory to that level is unrealistic. If a single cylinder is unaccounted for or misplaced within PacifiCorp’s inventory, we would exceed the target emission rate and be considered non-compliant. Any small operational issue or small loss of gas during maintenance may push an entity over the annual emissions rate threshold. (PacifiCorp1)

Response: ARB staff believes that SF₆ emissions from GIS equipment can be measured precisely enough to meet the proposed one percent SF₆ emission rate because the scales used to measure the SF₆ gas containers are required to be accurate to within one percent of the true weight. ARB staff does not agree that 18 pounds of SF₆ gas — one percent of PacifiCorp’s gas use in California— is insignificant. Because of its substantially greater warming potential than other greenhouse gases, 18 pounds of SF₆ emissions would equal about 200 metric tons of carbon dioxide (CO₂) equivalent emissions. It is therefore important that the commenter exercise sufficient operational and inventory control to ensure that such emissions do not occur.

C-3. Comment: The rule should identify an alternative “maximum” annual emissions amount expressed in pounds – perhaps 100 pounds – that regulated entities with very low inventories of SF₆ are subject to rather than a percentage, or alternatively, expand the list of exemptions in “emergency events” that will allow more venting of SF₆ without penalty. (PacifiCorp1)

Response: ARB staff disagrees. ARB staff believes that the proposed emission rate standards (rather than an annual emission cap) is a more equitable method for distributing emission reductions and associated costs among affected entities. With respect to exempting venting of SF₆ due to an emergency event, ARB staff has modified the definition of emergency event to include events other than those that are natural disasters. The revised definition should adequately address the issue raised by the commenter.

Allow Emission Credits

C-4. Comment: Early reductions should be encouraged by allowing a utility whose SF₆ emission rate is lower than the maximum annual emission rate specified for the relevant year in section 95352 of the proposed SF₆ regulation to carry over the excess reduction to help the utility comply with the maximum emission rate in future years.

The ARB’s Low Carbon Fuel Standard (“LCFS”) provides a more elaborate example of this approach. The LCFS allows for compliance by means of “credits” for fuels with lower carbon intensity and allows trading of such credits. If ARB does not wish to modify the proposed SF₆ regulation to provide that excess reductions are credits that can be traded between entities covered by the proposed SF₆ regulation, the ARB should, at minimum, allow an entity to carry forward its own excess reductions. In order to permit banking of excess reductions, add the following additional wording at the end of section 95352: “If a GIS owner’s SF₆ emission rate in a particular year (Year A) is lower than the maximum allowable SF₆ emission rate for that year (Year A Rate), the GIS owner can bank the excess reduction (equal to the difference between the Year A Rate and the GIS owner’s actual SF₆ emission rate for Year A) as a credit that can be used to comply with the SF₆ emission rate in future years.” (SCPPA1, SCPPA2)

C-5. Comment: Regulations should create an incentive for early emission reductions. ARB's LCFS and proposed renewable energy standard (RES) regulations include a mechanism to create compliance credits that can be carried forward and used toward compliance in future years. The proposed SF₆ regulation should also include such a mechanism. (LADWP)

Response: ARB staff believes it is unnecessary to include credit banking or trading provisions in the proposed regulation. ARB's LCFS program is much more complex than the proposed SF₆ regulation and has greater recordkeeping and reporting requirements. Similarly, the proposed RES regulation has greater reporting and recordkeeping requirements than the proposed SF₆ regulation and greater compliance costs. By including credit banking or trading provisions or by using an emission rate standard as opposed to an emission reduction standard, some entities would only need to continue their existing business practices to stay in compliance with the regulation. This means that the regulation would be less effective and would result in less emission reductions.

D. Emergency Event Exemption

D-1. Comment: The emergency event exemption should begin in 2011, not 2020. (PacifiCorp1)

D-2. Comment: The exemption should be available from the start of the regulation. Amend section 95353(a) to read: "After January 1, 2011 ~~2020~~..." (SCPPA1)

D-3. Comment: The exemption should be available from the effective date of the regulation. Modify section 95353(a) to read: "After January 1, 2012 ~~2020~~....2) Was either: i) beyond the control of the GIS Owner or operator, or (ii) was necessary to avoid immediate electrical system outages." (Joint Utilities)

Response: ARB staff agreed and modified the regulation to allow requests for emergency event exemptions to start at the beginning of the compliance period, January 1, 2011. Furthermore, staff modified the definition of "emergency event" to broaden the types of events that can be considered an emergency. Avoidance of an immediate electrical system outage could constitute an emergency event, depending on the circumstances, and would be evaluated on a case-by-case basis.

D-4. Comment: Increase the time needed to apply for an exemption from 30 to 60 days from the time of the occurrence of the event. Amend section 95353(b) as follows: "A request for an exemption pursuant to this section must be submitted in writing to the Executive Officer within 60 ~~30~~ calendar days after the occurrence of the emergency event..." (Joint Utilities)

D-5. Comment: Increase the time needed to apply for an exemption from 30 to 60 days from the time of the “discovery” of the event. Amend section 95353(b) as follows: “A request for an exemption pursuant to this section must be submitted in writing to the Executive Officer within ~~360~~ calendar days after the discovery ~~occurrence~~ of the emergency event...” (SCPPA1)

Response: ARB staff believes that 30 days is a reasonable amount of time for a GIS owner to report an occurrence of an emergency event, and therefore did not modify the regulation to extend this time period. The existing time period will encourage prompt reporting. In addition, ARB staff believes it is unnecessary to replace the word “occurrence” with “discovery” because a GIS owner will most likely discover the occurrence of an emergency event very soon after it happens.

E. SF₆ Inventory Measurement Procedures

Cost

E-1. Comment: The cost to comply with the requirement to weigh gas containers each time gas is transferred into or out of the container is vastly greater than indicated in the Initial Statement of Reasons. For medium and large utilities that operate multiple facilities with SF₆ equipment and have many gas containers, a computerized recordkeeping system will be needed to integrate the per-use weighing and recordkeeping into the work management system to properly manage and store the data and to be able to produce records upon demand for inspection purposes. Based on the cost estimates – total record keeping and reporting costs of \$440,000 to \$640,000 over the 10 year compliance period for a medium entity – in SCPPA’s February 24, 2010, letter, ARB should revisit staff’s cost analysis of the proposed regulation and continue to work with stakeholders to prepare a revised estimate that more accurately reflects the actual cost to comply with the recordkeeping and reporting requirements. (SCPPA2)

E-2. Comment: The provision that each gas container be weighed before and after each use is overly burdensome and not necessary for the calculation of the annual emission rate, which is what the compliance is set upon. This adds to the estimated labor and to the computerized data management system that we and others would have to put in place to accomplish this. The estimated labor and system costs would be considerably more than what was included in the staff report. We estimated that just putting in the data management system would be over \$200,000 plus labor to operate. Owners of GIS should be required to weigh gas containers only on an annual basis. (SCE1, SCE2)

E-3. Comment: The proposed SF₆ inventory measurement procedures will require GIS owners to keep certified scales at each storage location, which would cause reporting facilities to incur significant costs to monitor relatively de minimus amounts of GHG emissions. A less costly monitoring technique would be a mass balance method similar to what is used in EPA’s Voluntary SF₆ Partnership

Program for Electric Power Systems. This would eliminate the need for entities to log and weigh cylinders upon entering and leaving storage and eliminate the need for scales to be kept at each storage location. (NextEra)

Response: ARB staff agreed that the requirement to weigh each container before and after each use is unnecessary and modified the regulation to require the weighing of containers only at the end of each calendar year or when added or removed from inventory. (See response to Comments E-4 to E-6 below). Staff believes these modifications will allow GIS owners to track SF₆ emissions and calculate their SF₆ emission rates in a more cost-effective manner.

The cost estimates provided by some commenters for developing a computerized recordkeeping system to track per-use weighing of containers not applicable to the revised recordkeeping requirements. In addition, NextEra's concern over the cost of placing scales at each storage location is no longer relevant, because such action would not be necessary under the revised requirements.

Weighing Canisters

E-4. Comment: Gas canisters should not be weighed at the beginning and end of each calendar year, which would mean weighing December 31st and January 1st. We weigh annually and when a container goes in and out of service. (PG&E)

E-5. Comment: Gas canisters should be weighed at the start and end of each year instead of per-use. This is consistent with ARB's mandatory reporting of greenhouse gas emissions regulation and USEPA's voluntary SF₆ emission reduction program. (SCPPA2)

E-6. Comment: Gas containers need only be weighed once a year to calculate the SF₆ emissions inventory. Modify section 95354(a) as follows: "(1) Establish and adhere to written procedures to track and weigh all gas containers as they are leaving and entering storage." (SCPPA 1, Joint Utilities)

Response: ARB staff agreed and removed the requirement in section 95354 (a)(1) to weigh containers as they enter and leave storage. In addition, language was added to section 95355(b)(4) to specify that containers should be weighed at the end of each calendar year and when they are added or removed from inventory.

E-7. Comment: The calibration and data collection requirements should be delayed until January 1, 2011, and should not be retroactive to January 1, 2010. Recordkeeping and reporting should not be mandated before the regulation is adopted. (SCE1)

Response: ARB staff agreed and modified sections 95354 and 95355 to clarify that the effective date for the measurement procedures and recordkeeping requirements is January 1, 2011.

- E-8. Comment:** Specify the entity that will certify the accuracy of the scales to be used (e.g., the manufacturer) in section 95354(a). (SCE1, SCPPA1)
- E-9. Comment:** Amend section 95354(a)(2) as follows: “ Weigh all gas containers at the beginning of each calendar year on a scale that is certified by the manufacturer of the scale to be accurate to within one percent of the true weight.” (SCPPA1)
- E-10. Comment:** The SF₆ containers should be weighed on scales that are certified by the manufacturer. Amend section 95354(a)(2) as follows: “ Weigh all gas containers on a scale that is certified by the manufacturer of the scale, to be accurate to within one percent of the true weight.” (Joint Utilities)

Response: ARB staff agreed and modified the regulation to clarify that the manufacturer is the entity responsible for certifying the accuracy of the scale. In addition, SCPPA’s suggestion to require containers to be weighed at the beginning of each calendar year has been addressed in the modifications to section 95355 (b)(4).

- E-11. Comment:** Eliminate the annual certification requirement for scales. (NextEra)

Response: It is ARB staff’s understanding that the commenter is assuming the scales must have a Weights and Measurements seal demonstrating accuracy to within one percent of the true weight. However, the regulation does not require such a seal nor is certification required annually for the scales. The regulation does require scales be recalibrated at least annually or at the minimum frequency specified by the manufacturer, whichever is more frequent. No change was made to the regulation based on this comment.

F. Recordkeeping

- F-1. Comment:** Substitute the defined term “GIS Owner” for the phrase “Owners of gas insulated switchgear” in the first line of this section 95355. (SCPPA1)

Response: ARB staff agreed and modified this section accordingly.

- F-2. Comment:** Rather than weighing SF₆ containers each time gas is transferred in or out of them, a more useful approach would be to track when SF₆ is transferred in and out of GIS equipment. Amend section 95355(b) as follows: “(4) A chronological record of dates on which ~~accounting, by weight in pounds, of~~ SF₆ is transferred into or out of Active GIS equipment;” and “(5) The current SF₆ residual, by weight in pounds, as of the most recent weighing of the container.” (SCPPA1)
- F-3. Comment:** Revise section 95355(b) as follows to reflect an annual weighing requirement: “(4) An annual ~~chronological~~ accounting, by weight in pounds, of SF₆ transferred into or out of the container;..” (Joint Utilities)

Response: These comments were addressed by the modifications that were made to sections 95355(a) and (b)., as described in the responses to comments E-1 to E-6. However SCPPA's suggested changes to section 95355(b)(5) are not necessary because this section was deleted to conform to other modifications made to section 95354(a)(1).

F-4. Comment: Electronic records and jointly-owned records should be addressed. The proposed regulation should accommodate instances where electronic storage of documents is done off-site, and even out of state by the GIS owner or operator. Add subsection (3) to section 95355(d) as follows: "(3) GIS owners may retain records outside of California if such records are electronically stored or jointly owned in the normal course of business." (SCPPA1)

F-5. Comment: The regulation should allow off-site and out-of-state record storage. Add subsection (3) to section 95355(d): "GIS owners may retain records outside of California if such records are electronically stored or jointly owned, and are thus retained in the normal course of business." (Joint Utilities)

Response: ARB staff does not believe it is necessary to add provisions to the regulation to address records formatting and jointly-owned equipment. The regulation does not restrict GIS owners from storing records out-of-state, nor does it specify the recordkeeping format. GIS owners may store and submit data in the format that best fits their business practices. Electronic records would be acceptable under the current language.

Co-owners of equipment will be responsible for determining their portion of ownership and tracking and reporting their proportionate SF₆ emissions. It is not practical for ARB staff to understand the ownership arrangements between co-owners, these arrangements are sometimes complex and involve multiple corporate relationships. Co-owners are in a much better position to understand their contractual arrangements and ownership responsibilities. If the GIS owner is headquartered in California, records for all GIS equipment the owner is responsible for must be centralized in one location in the State. However, duplicate records can be kept at other locations. The regulation does allow GIS owners headquartered out of the State to store records for GIS equipment they are responsible for at their business offices nearest to California.

F-6. Comment: Allow sufficient time to prepare records for inspection. Amend section 95355(e) as follows: "(e) Have all records available for ARB inspection at time of inspection, provided that the ARB gives 15 business days' advance notice of inspection;..." (SCPPA1, Joint Utilities)

Response: ARB staff does not believe that GIS owners should be given advance notice of inspections in order to have sufficient time to prepare records. The purpose of an inspection is to conduct an unannounced visit to determine if a GIS owner is in compliance with the regulation, including the recordkeeping requirements, at all times. Providing advanced notice of inspections would defeat this purpose.

F-7. Comment: In section 95355(a)(3) the identification of hermetic or non-hermetic seal type is irrelevant since non-hermetically sealed equipment is not utilized in the emission calculations. (PacifiCorp1)

Response: ARB staff believes the identification of hermetic or non-hermetic seal type is relevant. As mentioned in the response to Comment A-3, requiring regulated parties to inventory all GIS equipment, including those hermetically sealed, will allow the ARB to track regulated parties' practices for using or switching to hermetically sealed equipment. This information will be used to evaluate the impact of these practices on SF₆ emissions from this industry sector, and determine if future changes may be needed to the regulation.

F-8. Comment: In subsection (a)(5) of the inventory requirements, the date of manufacture of the equipment does not seem to be relevant and may be difficult to obtain other than in general terms. (PacifiCorp1)

Response: ARB staff believes it is relevant to maintain records of the date of the equipment's manufacture. This information will allow the ARB to determine if future modifications are needed to the regulatory requirements. ARB staff understands that the information for some older equipment may be difficult to obtain and would expect equipment owners to estimate the date to the best of their ability when the exact date of manufacture cannot be determined.

F-9. Comment: In section 95355(a)(11)(B) (formerly section 95355(a)(9)(B)), requiring the date and disposition of equipment removed and no longer in inventory does not seem relevant. It implies that records of SF₆ equipment removed need to be permanently maintained. There is no reason or value to do so and maintaining this information may actually be difficult to do other than in general terms. (PacifiCorp1)

Response: ARB staff believes that it is relevant for GIS owners to record the date and the reason the equipment was removed from the inventory. Records of such removal would not need to be permanently maintained. Equipment removed from inventory would only be reported to the ARB in the reporting year in which it occurred and maintained for three (3) years.

G. Annual Reporting Requirements

Submittal Date of Initial Report

G-1. Comment: The first annual report should be due in 2012 rather than 2011. (SCPPA1, SCE1, Joint Utilities)

Response: ARB staff agreed and modified section 95356(a) accordingly.

Emissions Equation

G-2. Comment: The terms in the equation for determining annual SF₆ emissions need to be expanded to address acquisitions and disbursements between and among GIS owners/operators. Amend section 95356(d) as follows:
“Where...Acquisitions of SF₆ = (SF₆ purchased from chemical producers or distributors, ~~or operators of GIS equipment in bulk~~) + (SF₆ purchased from equipment manufacturers or distributors, ~~or operators of GIS equipment with or inside non-hermetically sealed GIS equipment~~) + (SF₆ returned to the site after off-site recycling) + ~~(SF₆ extracted from GIS equipment owned by another GIS owner and put into the reporting entity’s storage).~~”

“Disbursements of SF₆ = (SF₆ ~~that is sold to other entities for use in bulk and contained in non-hermetically sealed GIS equipment that is sold to other entities~~) + (SF₆ returned to suppliers) + (SF₆ sent off-site for recycling) + (SF₆ sent to destruction facilities).” (SCPPA1, SCPPA3)

Response: ARB staff agreed and modified section 95356(d) to address the commenters’ concerns.

G-3. Comment: Substitute the defined term “Active GIS Equipment” for the phrase “non-hermetically sealed GIS equipment” in section 95356(d) to be consistent with other sections of the regulation. (SCPPA1)

Response: ARB staff agreed and modified section 95356(d) accordingly.

G-4. Comment: Substitute the term “change” for the terms “decrease” and “net increase” in section 95356(d) to be consistent with U.S. EPA’s SF₆ program reporting form. Amend this section as follows:

“User Emissions = (~~Change~~ ~~Decrease~~ in SF₆ inventory) + (Acquisitions of SF₆) – (Disbursements of SF₆) – (~~Net increase~~ Change in total nameplate capacity of non-hermetically sealed Active GIS Equipment owned)”

“Where:
Decrease Change in SF₆ inventory = ...”

“~~Net increase~~ Change in total nameplate capacity of non-hermetically sealed Active GIS Equipment ~~operated~~ = (the nameplate capacity of new non-hermetically sealed Active GIS equipment) – (Nameplate capacity of retired non-hermetically sealed GIS equipment that is no longer Active GIS Equipment).”
(SCPPA1)

Response: ARB staff believes it is unnecessary to include the suggested changes in the regulation (other than replacing “non-hermetically sealed GIS equipment” with “Active GIS equipment,” which is discussed in the response above). Staff evaluated the

information required in EPA's program at the time the regulation was developed, and captured the pertinent information in the proposed regulatory requirements. ARB staff will track future changes to EPA's rule and propose changes to the regulation, if appropriate. Additionally, replacing "net increase" and "decrease" with the term "change" could result in over- or under-reporting of emissions.

G-5. Comment: Refer to or include the reporting form from the U.S. EPA SF₆ program, with amendments as required by differences in the proposed regulation, as guidance to entities in calculating their annual SF₆ emissions. (SCPPA1)

Response: ARB staff believes it is unnecessary to include the reporting form from U.S. EPA's SF₆ program in ARB's regulation. It is important to note that the ARB and U.S. EPA programs have different purposes. U.S. EPA's SF₆ program involves voluntary reporting of SF₆ emissions, whereas ARB's SF₆ regulation mandates SF₆ emission rate standards between 2011 and 2020. ARB staff crafted the regulatory requirements to capture the pertinent information required in U.S. EPA's program, but modified U.S. EPA's requirements to accommodate emission rate standards. The standards necessitate greater accuracy in recordkeeping and reporting requirements. Consequently, regulated entities must calculate their annual SF₆ emissions according to ARB's requirements, not the U.S. EPA's method. As mentioned in the response above, staff will continue to monitor any changes to U. S. EPA's program and propose changes to the regulation, if warranted.

Emission Rate

G-6. Comment: Adopt a more simplified calculation for nameplate capacity. Tracking the number of days each piece of equipment was in active service during the year is not necessary and is beyond current industry practice. Instead, use U.S. EPA's simpler method in its SF₆ program and draft subpart DD of the reporting rule. This approach captures changes made to the active GIS equipment during the year without imposing a significant additional recordkeeping and reporting burden. (SCE1, SCE2, SCPPA1)

G-7. Comment: Amend section 95356(e) to be consistent with the U.S. EPA SF₆ program approach as follows:

"Equation for determining emissions rate:

Emission Rate = Annual Emissions per subsection (d) (lbs)/C_{avg} Total nameplate capacity of Active GIS Equipment at end of year (lbs)"

"Where: Total nameplate capacity of Active GIS Equipment at the end of the year = (total nameplate capacity of Active GIS Equipment at the beginning of the year) + (nameplate capacity of Active GIS Equipment added during the year) –

(nameplate capacity of Active GIS Equipment removed during the year)” and delete the remainder of section 95356(e). (SCPPA1)

Response: ARB staff believes it is unnecessary to include the suggested changes in the regulation. As mentioned in the response above, ARB staff crafted the regulatory requirements to capture the pertinent information required in U.S. EPA’s program, but modified U.S. EPA’s requirements to accommodate the emission rate standards. For regulatory standards, it is necessary to have greater accuracy in recordkeeping and reporting requirements to reflect actual operations during the course of the year. The suggested modifications would not provide the necessary level of accuracy needed to determine compliance with the emission rate standards.

G-8. Comment: The recordkeeping and reporting requirements of this proposed regulation will create significant additional demands on our staff resources. A simpler approach would be EPA’s approach to determine annual nameplate capacity, which is total nameplate capacity at the beginning of the year, plus nameplate capacity added during the year, minus equipment removed during the year. (LADWP)

Response: ARB staff does not believe that the recordkeeping and reporting requirements of the regulation are burdensome. As mentioned above, ARB staff crafted the regulatory requirements to capture the pertinent information required in U.S. EPA’s program, but modified U.S. EPA’s requirements to accommodate the emission rate standards. The standards necessitate greater accuracy in recordkeeping and reporting requirements to reflect actual operations during the course of the year. The suggested modifications would not provide the necessary level of accuracy.

G-9. Comment: Amend subsection (e) to read “Where: d_i = the number of days during the year that the GIS device constituted Active GIS Equipment ~~was in active service.~~” (SCPPA1)

G-10. Comment: Substitute the defined term “Active GIS Equipment” for the phrase “GIS devices used in ‘active service’” in section 95356(e) to be consistent with other sections of the regulation. (SCPPA1)

Response: ARB staff believes that the intent of the current language is clear and does not need to be modified.

Jointly-Owned GIS Equipment

G-11. Comment: Emissions from jointly-owned GIS equipment should be allocated proportionately to each owner. Section 95356 needs to specify how jointly-owned equipment should be divided among and reported by the individual owners. Add subsection (f) to section 95356 as follows: “(f) Joint ownership. Where GIS equipment is jointly owned by two or more GIS owners, each joint owner must multiply the annual emissions from, and the nameplate capacity of,

the jointly owned GIS equipment by its percentage equity share (ownership or entitlement share) in that equipment, and include that share of the emissions and nameplate capacity in its annual emissions rate calculation.”
(SCPPA1, SCPPA3)

Response: As noted in the response to Comments F-4 and F-5, ARB staff does not believe that it is necessary to add provisions to the regulation to address jointly-owned equipment. Co-owners of equipment will be responsible for determining their portion of ownership and for tracking and reporting their proportionate SF₆ emissions.

Reporting Flexibility for Small and Multi-jurisdictional Utilities

G-12. Comment: PacifiCorp is currently following most of the draft rule’s reporting requirements; however, calculating precise SF₆ emissions for just the State of California service territory may require unnecessary and costly process changes. Currently our crews in Medford, Oregon service our Northern California equipment. PacificCorp uses the same SF₆ cylinder for both California and Oregon GIS equipment, which could lead to the appearance of unaccounted SF₆ gas. PacifiCorp suggests that language within the rule acknowledge the unique circumstances of small and multi-jurisdictional utilities by allowing additional reporting flexibility. (PacifiCorp1)

Response: ARB staff does not believe that provisions should be added to the regulation to specifically address utilities that service more than one state. Utilities, such as PacifiCorp, that service more than one state are able to dedicate the use of their SF₆ cylinders to a single state. It is not unreasonable for these regulated parties to track cylinders used in California separately from cylinders used in another state, nor should it be more burdensome for them to comply with the regulatory requirements than other regulated parties.

H. Enforcement

Legality of penalty provisions

H-1. Comment: Imposing daily violations is a right, not an obligation of the ARB and is limited to situations where it is “appropriate” based on Section 38580(b)(3) of the Health and Safety Code. Daily penalties are not appropriate where the obligation is annual rather than daily. ARB has not provided any objective criteria to justify converting compliance with an annual limit into separate daily violations. (SCPPA1)

H-2. Comment: The enforcement of the regulation must be reconciled with the express provisions of Health and Safety Code section 38580(b)(3), which requires that penalties be appropriate. In this case, a daily provision for an annual compliance obligation is not appropriate and is inconsistent with state law. (Joint Utilities)

H-3. Comment: The proposed enforcement language for exceeding the annual SF₆ emission rate is not appropriate for compliance with an annual limit and does not constitute a method for converting a violation of the annual limit into the number of days in violation for purposes of assessing the appropriate penalty. AB 32 did not intend for the ARB to issue a mandatory penalty provision deeming an annual emission violation to automatically constitute 365 days of violation. If the legislature had intended such a result, it would have enacted a specific penalty provision to that effect. The proposed language does not constitute a method as authorized by the legislature but is instead an absolute mandate that deems any violation of the annual SF₆ emissions rate regardless of the circumstances to be 365 separate violations subject to a separate penalty for each. If ARB adopts section 95358(c) as currently worded it may be acting outside of the scope of the authority delegated to it by the legislature in violation of Government Code section 11346 and following. In addition, such an approach would be arbitrary and lacking in evidentiary support. (SCPPA2)

H-4. Comment: While AB32 provides in section 38580(b) that CARB may develop daily penalties, it expressly notes it may be done where appropriate. In instances where the compliance obligation is a total maximum annual emissions rate, as in the case of this regulation, a daily penalty provision is simply inappropriate. (NCPA)

Response: ARB staff believes the daily penalties in the proposed regulation are appropriate and allowed under the Health and Safety Code. Existing penalty provisions incorporated by Health and Safety Code section 38580(b)(1) set forth maximum penalties in terms of “per day.” Per-day penalty provisions in many environmental laws have been interpreted and upheld by courts for decades. Courts have routinely concluded that a violation over the course of a compliance period, such as a month, or a year, should be treated as a series of violations lasting for the number of days in the averaging period. (See, e.g., *Chesapeake Bay Foundation v. Gwaltney of Smithfield* (4th Cir. 1986) 791 F.2d 304, 314)

Section 38580(b)(1) of the Health and Safety Code expressly incorporates “per day” penalty provisions from existing provisions in the California Clean Air Act. Section 38580(b)(3) gives discretion, but not a mandate, for ARB to adopt a formula converting violations measured in some other metric, into days. ARB chose the simplest method, initially basing penalties on days. The physical magnitude of the violation will still be considered as a factor, pursuant to Health and Safety Code section 42303, and penalties can be adjusted downward to reflect small emissions.

Remove Daily Penalties

H-5. Comment: Modify section 95358 to strike the daily penalty language as follows: “(a) Penalties. Penalties may be assessed for any violation of this subarticle, including failure to submit necessary reports, pursuant to Health and Safety Code

section 38580. ~~Each day during any portion of which a violation occurs is a separate offense.~~

~~(b) Each day or portion thereof that any report required by this subarticle remains unsubmitted, is submitted late, or contains incomplete or inaccurate information, shall constitute a single, separate violation of this subarticle.~~

~~(c)(b) Any exceedance of the maximum allowable SF₆ emission rate for a calendar year shall constitute a single, separate violation of this subarticle for each day of the calendar year.~~

~~(d)(c) Injunctions.~~ Any violation of this subarticle may be enjoined pursuant to Health and Safety Code section 41513. (Joint Utilities)

H-6. Comment: In the absence of objective criteria for imposing daily violations, section 95358(c) should be modified as follows: “Any exceedance of the maximum allowable SF₆ emission rate for a calendar year shall constitute a single, ~~separate,~~ violation of this subarticle ~~for each day of the calendar year.~~” (SCPPA1)

H-7. Comment: There should not be daily penalties for an annual emissions limit. ARB has the flexibility to establish an annual penalty structure for an annual limit and should do so. (SMUD)

H-8. Comment: An exceedance of the annual emission limit should be treated as a single violation, instead of treating each day during the exceedance period as a separate violation. (SCE1)

Response: ARB staff does not believe that the daily penalties should be removed from the enforcement provisions. ARB staff worked closely with the regulated parties in developing the annual emissions standard. This approach gives the most flexibility possible to reduce emissions while still allowing the regulated entities to reduce their emissions in a system that best fits their operational needs. The annual reporting system allows regulated entities 365 days to assess their own compliance, and address any problems. Moreover an underlying purpose of this regulation is to minimize SF₆ leaks which can occur each day of the year; regular monitoring and maintenance, is not a one time event.

The purpose of Health and Safety Code section 38580 and the penalty provisions it incorporates is to deter violations. Arbitrarily treating an exceedance over the course of a year as a single violation would simply not deter some violations. However, if a violation of an annual emission limit were considered one violation, in many cases it could be cheaper for a regulated entity to violate the annual limit rather than comply. For example, if violating an annual standard was considered a single violation, a likely fine would be somewhere between a \$1,000 to \$10,000 maximum. Those figures are well below what it might cost to replace leaking equipment, or take other steps necessary to comply. Such a penalty would not achieve the emission-reduction goals of

the statute and the rule, because it would often be cheaper to violate the standard than to comply.

Mechanism to determine penalty

- H-9. Comment:** ARB needs to further address section 95358(c) of the proposed regulation. That a facility could receive 365 separate violations for an exceedance of an allowable annual leakage rate is extreme and unnecessary. The leak is one event and if any penalty is necessary it should be treated as one event. If a facility acts prudently and in a timely manner it would still be penalized in a similar manner to a facility that just ignored the leak until the end of the year. If penalties are deemed necessary, ARB needs to adjust the proposed penalty to appropriately match monitoring and compliance requirements. Adjust the penalty from a 365x multiplier to one based on either volume of gas released or some other metric. (NextEra)
- H-10 Comment:** The proposal should include more detail on the basis upon which penalties for breach of the regulation, both monetary and otherwise, are determined and administered. Specifically, the regulation should include a mechanism to determine the penalty for exceeding the annual emission rate which should be proportional to the degree by which the annual limit was exceeded. (SCPPA1)
- H-11. Comment:** A reasonable alternative to the proposed penalty provisions is to develop a method, as appropriate, to calculate the number of days in violation for entities that violate the maximum annual SF₆ emission rate. Such a method should include a review of all emission records for the facility and a determination as to what caused the exceedance, the duration of the exceedance, and the extent of the exceedance. Alternatively, a simpler approach would be for the ARB to deem an exceedance for the maximum annual SF₆ emission rate to be a single violation and specify a method for assessing penalties proportional to the magnitude of the violation. For example, pounds of excess SF₆ emissions can be calculated by using the data provided in the annual report as follows: “Excess Emissions = (actual annual SF₆ emissions) – (allowed emissions based on the maximum annual SF₆ emission rate and the nameplate capacity of the entity’s Active GIS Equipment).” A penalty could be assessed based on the pounds of excess emissions, taking into consideration mitigating circumstances and the entity’s efforts to comply with the regulation. (SCPPA2)
- H-12. Comment:** An appropriate method for calculating penalties may be to consider the number of pounds of SF₆ by which an entity exceeded the annual limit. (Joint Utilities)
- H-13. Comment:** Penalties for noncompliance could prove excessive, and not commensurate with the violations. This potential is heightened by CARB’s effort to align its current “daily penalty” scheme with an annual compliance obligation

regulation. Mitigating circumstances, such as delays in scheduling repair due to electricity system reliability concerns, should be identified in the regulation. (PacifiCorp1)

H-14. Comment: The enforcement provisions should be based on clearly defined guidelines that are developed as part of the public process. Specific language stating what the penalties are and how they are determined must be included in the regulation or accompanying guidelines. Parties should be afforded a view of the due process and penalty structure they may face for failure to comply with the new regulations. Insight into the penalty structure will help send a clear signal to participants about what is expected. (Joint Utilities)

H-15. Comment: The enforcement provisions do not include any guidelines or directions regarding the penalty determination factors, notice or appeal provisions. There are no provisions regarding notice for insufficiency of report, yet there are contemplated daily penalty provisions for insufficient reports in addition to daily exceedances. (NCPA)

H-16. Comment: In the event that monetary penalties are assessed, the penalty calculation metric should be included in the regulation or in publically developed guidelines. The calculation and determination of the penalty should be crafted to deter non-compliance by removing any economic benefits of non-compliance, and take into account the compliance entity's culpability in the exceedance, including intentional or negligent acts. The penalty provisions should be crafted as to recognize instances where maximum SF₆ levels are exceeded, but not through malfeasance or negligence on the part of the compliance entity, and the penalty metric must not be so onerous as to preclude the ability of a compliance entity to pay the fee and continue meeting ongoing and future compliance obligations. (Joint Utilities)

Response: Other portions of the Health and Safety Code do what the commenters propose – provide guidance regarding how penalties are to be determined. Notably Health and Safety Code section 42403 sets forth factors ARB or a court should consider in determining penalties. Those factors would include mitigating circumstances noted by one commenter, such as unavoidable delays in performing repairs. It is neither possible nor necessary to catalogue in advance all possible mitigating circumstances in the regulation.

ARB has historically used the statute's general factors to seek fair penalties based on the circumstances of each case. ARB staff agrees that such penalties must be large enough to remove any economic benefit resulting from non-compliance.

ARB staff agrees that penalties should "take into account the compliance entity's culpability in the exceedance, including intentional or negligent acts." In fact, the Legislature expressly incorporated into AB 32 penalty statutes that differentiate between strict liability, negligent, knowing, and intentional violations, and provide different penalty

amounts for each. (See Health & Safety Code §§42400, 42400.1, 42400.2, 42400.3, 42402, 42402.1, 42402.2, 42402.3)

ARB staff agrees with the comment that “parties should be afforded a view of the due process and penalty structure they may face for failure to comply with the new regulations. Insight into the penalty structure will help send a clear signal to participants about what is expected.” For that reason, ARB’s website includes descriptions of enforcement processes, as well as what penalties a violator faces for various types of violations. (See <http://www.arb.ca.gov/enf/meetings/bdhearing/bdhearing.htm>) Those procedures do take into account a violator’s ability to pay a penalty, as one commenter suggested.

With regard to the SCCPA2 comment suggesting that ARB develop a penalty calculation method based on pounds of excess emissions, ARB notes that Health and Safety Code section 38580(b)(3) gives discretion, but not a mandate, for ARB to adopt such a formula converting violations measured in some other metric, into days. ARB staff did consider other enforcement metrics proposed by the commenters, but chose the statutory penalty structure, basing potential penalties on the number of days of violation. The physical magnitude of the violation will still be considered as a factor, pursuant to Health and Safety Code section 42303, and penalties can be adjusted downward to reflect small emissions. A rigid formula based on pounds, for example, would ignore the other factors set forth in section 42403.

In keeping with the goal of deterring violations, neither the Legislature nor ARB has adopted rigid penalty formulas that would facilitate premeditated calculation of penalties in advance of violations.

Corrections to reports before penalties are imposed

H-17. Comment: Reporting entities should have the opportunity to correct unintentional inaccuracies or deficiencies in reports before penalties are imposed. Amend section 95358 as follows: “(b) Each day or portion thereof that any report required by this subarticle remains unsubmitted, is submitted late, or contains incomplete or inaccurate information shall constitute a single, separate violation of this subarticle (subject to section 95358(c)).

(c) Any report that a reporting entity submits in good faith and reasonably believes to be complete and accurate at the time of submission shall not be deemed incomplete or inaccurate for the purposes of section 95358(b) until the reporting entity receives a notice from the ARB identifying the deficiency and requesting corrected or additional information. If the reporting entity provides the requested information within 30 days of receiving the notice, the report shall be deemed to be complete and accurate as of the date of the original submission.”
(SCPPA1)

Response: The commenter suggests that reporters should have an opportunity to correct unintentional inaccuracies. ARB staff assumes that all reporters will correct inaccuracies, in an effort to comply with the rule. To the extent such corrections are promptly made, ARB will consider those efforts pursuant to Health and Safety Code section 42403, which expressly refers to actions taken to mitigate violations. To the extent the commenter assumes unintentional violations be punished more leniently, ARB staff agrees. The Health and Safety Code already distinguishes between intentional and unintentional violations. The Legislature expressly incorporated into AB 32 penalty statutes that differentiate between strict liability, negligent, knowing, and intentional violations, and provide different penalty amounts for each. (See Health & Safety Code §§42400, 42400.1, 42400.2, 42400.3, 42402, 42402.1, 42402.2, 42402.3). In addition, any penalties can be further reduced to reflect all relevant factors.

The proposed amendment subparagraph (c) would add a significant burden to administering the program. For each report, the proposed amendment would require ARB to determine whether a report was deficient, create and send a notice, and track a response period. The reporting entity is in the best position to create an adequate report and evaluate its accuracy before submitting it to ARB.

I. Opposition to Proposal

I-1. Comment: UC Irvine has SF₆ switches, which means that cash-strapped universities that own their own distribution equipment will also have to meet the rules. The commenter opposes the proposed regulation because it will hurt the economy, drive business out of California, and do nothing to help the environment as there is no better insulator than SF₆. (Gudorf)

Response: Staff does not agree. ARB staff believes the proposed regulation is a cost-effective measure to reduce emissions of SF₆, the most potent of the six main greenhouse gases (GHGs). The measure is necessary to assist the State in meeting its goal of reducing GHG emissions to 1990 levels by 2020.

J. Consistency with Future EPA Rules

J-1. Comment: ARB should strive to make this regulation consistent with the SF₆ subpart of the U.S. EPA mandatory reporting rule in order to streamline recordkeeping and reporting for California utilities that will be subject to ARB and EPA rules. It is expected that EPA will finalize their SF₆ rule sometime this year. Once EPA's rule is finalized, we ask that ARB revisit this rule to ensure it is as consistent as possible with EPA's rule. (LADWP)

Response: ARB staff made every effort to be consistent with EPA's draft SF₆ rule during the development of the regulatory requirements. ARB staff intends to follow future changes to the EPA program and evaluate if modifications are needed to ARB's regulation.

K. Ban SF₆ for Lower Voltage Systems

K-1. Comment: Place tighter restrictions on replacement and new installations of electric equipment that is less than 72 kilovolts and contains SF₆. Ban the use of SF₆ in new equipment installed in commercial and industrial applications at lesser voltages, thus eliminating the future source of possible emissions versus just reducing the potential for dangerous emissions in existing installations. Viable and available alternatives exist throughout the industry for systems up to 72 kV. (Eaton1)

K-2. Comment: Include in the proposal an immediate ban on any type of product with SF₆ gas for electrical installation at 38,000 volts and down since air gap and vacuum bottle technology is proven, it's cost effective, and there is no reason to use SF₆ at that voltage. Use a step-up program up to 72,000 volts because vacuum bottle technology is readily available and economical. (Eaton2)

Response: During the early stages of regulatory development, ARB staff did consider including provisions that would ban lower-voltage GIS equipment. However, after evaluating the cost impacts on businesses, staff determined that this type of SF₆ reduction measure would not be cost-effective. Therefore, staff does not believe it is appropriate to make the changes suggested by the commenter.

L. Correction to Staff Report

L-1. Comment: The statement "Despite international research efforts, no equivalent alternative has been identified" in the Staff Report is not true. (Eaton1)

Response: This sentence, which appears on page ES-2 and page 2 in the Staff Report, should have stated "No equivalent alternative for 'high-voltage switchgear' has been identified."

IV. SUMMARY OF COMMENTS RECEIVED DURING THE 15-DAY COMMENT PERIOD AND AGENCY RESPONSES

Three written comments were received on the changes made to the original proposal and made available during the public comment period for the 15-day Notice (September 9, 2010 to September 24, 2010). A list of commenters is set forth in Table II below, identifying the date of all comments that were submitted during the 15-day comment period. Following the list is a summary of each objection or recommendation made regarding the proposed action, together with an explanation of how the proposed action has been changed to accommodate the objection or recommendation, or the reasons for making no change. The comments have been grouped by topic.

Table II: Comments Received During the 15-day Comment Period

| <u>Abbreviation</u> | <u>Commenter</u> |
|---------------------|---|
| Utilities Group | Lily Mitchell for the "Utilities Group:" Northern California Power Agency Pacific Gas and Electric Company Sacramento Municipal Utility District San Diego Gas and Electric Company Southern California Edison Company Southern California Public Power Authority Written testimony: September 24, 2010 |
| PacifiCorp2 | Eric Chung PacifiCorp Written testimony: September 24, 2010 |
| SCPPA4 | Norman A. Pedersen Southern California Public Power Authority Written testimony: September 24, 2010 |

1. Exemption Thresholds

- 1-1. **Comment:** Limit applicability (section 95350(b)) to “owners of *active* gas insulated switchgear *that totals over 5,000 pounds of nameplate capacity.*” This would effectively exempt small utilities, including PacifiCorp, and their customers from the burdensome reporting and associated costs required for compliance with this rule, while focusing efforts on those entities with larger capacities and associated emission risk. (PacifiCorp2)

Response: This comment is outside the scope of the 15-day changes; however, see response to Comment A-1 in the 45-day comment responses.

2. Definitions

- 2-1. **Comment:** Do not restrict the definition of Active GIS equipment to equipment that is connected to the GIS owner’s electrical power system. The GIS owner may not own the electrical power system to which the GIS equipment is connected. The effect of this definition would be that GIS equipment owned by one party and connected to an electrical power system owned by another party would not constitute active GIS equipment and would not be covered by this regulation. Modify section 95351(a)(1) as follows: “‘Active GIS Equipment’ means non-hermetically sealed SF₆ gas insulated switchgear that is connected through busbars or cables to the ~~GIS owner’s~~ electrical power system. ‘Active GIS equipment’ does not include equipment in storage.” (Utilities Group)

Response: ARB staff disagrees. ARB staff believes that the definition of electrical power system is broad enough that the units described in the comment would be considered as “Active GIS Equipment.”

3. Maximum Annual SF₆ Emission Rate

- 3-1. **Comment:** The exhibit showing declining allowable emissions from 10 percent in 2011 to 1 percent by 2020 should be modified to include a de minimus amount of allowable emissions, regardless of the amount of gas in active GIS equipment. We recommend 100 pounds of annual emissions as a limit for maximum allowable emissions. (PacifiCorp2)

Response: This comment is outside the scope of the 15-day changes; however, see response to Comment C-3 in the 45-day comment responses.

4. SF₆ Inventory Measurement Procedures

- 4-1. **Comment:** The requirement in section 95354 (a)(1) to weigh all containers at both the beginning and end of each calendar year is redundant. A requirement for an annual weighing of each container at either the beginning or end of each calendar year is sufficient. (PacifiCorp2)

Response: It is staff's understanding that the commenter is referring to suggested modifications to section 95354(a) that was in Attachment B to the Resolution. However, based on comments received during the 45-day comment period, the requirement in section 95354(a) to weigh each canister at the beginning and end of each calendar year was removed in the modified language released in the 15-day notice. Therefore, this comment is not relevant to the modified language.

5. Recordkeeping

5-1. Comment: The requirement in Section 95355(b)(4) to weigh all containers at both the beginning and end of each calendar year is redundant. A requirement for an annual weighing of each container at either the beginning or end of each calendar year is sufficient. (PacifiCorp2)

Response: It is staff's understanding that the commenter is referring to suggested modifications to section 95355(b)(4) that was in Attachment B to the Resolution. However, based on comments received during the 45-day comment period, the requirement in section 95355(b)(4) to weigh each canister at the beginning and end of each calendar year was modified in the 15-day notice. The modifications in the 15-day notice required weighing of canisters only at the end of each calendar year, which addresses the commenter's concern.

5-2. Comment: The location of the GIS equipment should not be included in the annual reports to ARB for security reasons. This appears to be an inadvertent addition in the 15 day language that deviates from the reporting requirements in the regulation that was adopted by the Board in February. Modify section 95356(b)(8) as follows to exclude information on the location of GIS equipment from the annual report: "(8) A gas insulated switchgear inventory report containing the information required by Section 95355, subsections (a)(1) through (a) (~~1044~~); and" (Utilities Group)

Response: Staff did not intend to have this information submitted as part of the annual report and did not require the submittal of this information in the original proposed text. A clerical error was made while developing the modified text for the 15-day notice. Staff corrected this error in the final regulation order.

5-3. Comment: The regulation should accommodate instances where electronic storage of documents is done off-site and even out-of-state by the GIS owner (or the operator of the GIS equipment, if the owner delegates recordkeeping responsibility to the operator). Add the following paragraph to section 95355(d):

(3) GIS owners may retain records outside of California if such records are electronically stored or jointly owned in the normal course of business.
(SCPPA4)

Response: This comment is outside the scope of the 15-day changes; however, see response to Comments F-4 and F-5 in the 45-day comment responses.

5-4. Comment: GIS owners should be given sufficient time to collect the records and prepare them for inspection. Records may need to be extracted from a central database or obtained from the operator in cases where the owner and the operator are different entities. Modify section 95355(e) as follows: (e) Have all records available for ARB inspection at time of inspection, provided that the ARB gives 15 business days' advance notice of inspection. (SCCPA4)

Response: This comment is outside the scope of the 15-day changes; however, see response to Comments F-6 in the 45-day comment responses.

6. Annual Reporting Requirements

Nameplate capacity

6-1. Comment: The requirement to calculate annual emissions using the average system nameplate capacity during the course of the year imposes an onerous amount of recordkeeping and calculation. In lieu of average system capacity, the capacity in service at the end of the year would be sufficient. (PacifiCorp2)

6-2. Comment: The nameplate capacity should be calculated on a monthly basis rather than a daily basis. Tracking the number of days each piece of equipment was in active service during the year is far beyond current industry practice. This would be administratively burdensome and increase the time, cost, and effort required for recordkeeping and calculating the annual emission rate. In addition, the requirement for accuracy down to single days would significantly increase the potential for inadvertent errors. Change d_i to m_i and change the definition of d_i to the following: m_i = The number of ~~days~~ months during the year the GIS device was in active. (SCPPA4)

Response: This comment is outside the scope of the 15-day changes; however, see response to Comments G-6 through G-8 in the 45-day comment responses.

Furthermore, ARB staff expects the calculation to be done either in a spreadsheet or database as part of a data management system. The calculation could be done once per year and, consequently, should not cause any additional effort to calculate a daily versus monthly average yet will provide greater accuracy in reporting.

Jointly owned equipment

6-3. Comment: A provision should be added to the regulation requiring ownership-share percentages to be used for determining nameplate capacity and annual SF₆ emissions from jointly-owned GIS equipment. If utilities use the ownership share approach with the current requirements, it could be interpreted as a breach of the regulation as it involves an additional calculation to which the regulation

does not refer. Without this clarification, it would be difficult for a utility with jointly-owned equipment to interpret the SF₆ regulation in a way that leads to reasonable results. Add the following paragraph to section 95356: (f): Joint ownership. Where GIS equipment or gas containers are jointly owned by two or more GIS owners, each joint owner must apply only its percentage equity share (ownership or entitlement share) of the relevant GIS equipment or gas container when calculating annual SF₆ emissions under subsection (d) and average system nameplate capacity under subsection (e).
(SPPA4)

Response: This comment is outside the scope of the 15-day changes; however, see the responses to Comment F-4 and F-5 and G-11 in the 45-day comment responses.

More flexibility throughout regulation is needed for small and multi-jurisdictional utilities

6-4. Comment: Thirty-five percent of PacifiCorp's California customers participate in the California Alternative Rates for Energy (CARE) assistance program. As such, the Company is particularly sensitive about keeping costs as low as possible while continuing to provide safe and reliable electric service. We recommend that the design, implementation, reporting, and enforcement of the rule should allow for flexibility with respect to small and multi-jurisdictional utilities with the objective of balancing benefits with potentially high or disproportionate costs of compliance. (PacifiCorp2)

Response: This comment is outside the scope of the 15-day changes; however, ARB staff worked closely with the regulated parties in developing the annual emissions standard. This approach gives the regulated parties great flexibility to reduce emissions while still allowing the regulated entities to reduce their emissions in a system that best fits their operational needs.

More flexibility in emission calculations for small and multi-jurisdictional utilities

6-5. Comment: Calculating precise SF₆ emissions exclusively for our California service territory may require unnecessary and costly process changes. Establishing procedures and methodologies to segregate California SF₆ emissions will require establishment of new storehouse locations of SF₆ gas within California and further disbursement of SF₆ gas stores, which would complicate inventory management and increase the risk of transportation losses. We suggest that the rule consider the unique circumstances of small and multi-jurisdictional utilities by either; (1) allowing additional reporting flexibility, or (2) prorating total company emissions to determine the emissions attributable to California for compliance purposes. (PacifiCorp2)

Response: These comments are outside the scope of the 15-day changes; however, see response to Comment G-12 in the 45-day comment responses. In addition, staff does not believe that multi-jurisdictional utilities serving customers in more than one

state will need new storehouse locations of SF₆ gas within California. Gas cylinders coming into California will need to be designated for California use only. This will assist utilities in streamlining the management of their gas cylinder inventory for complying with the recordkeeping and reporting requirements.

7. Enforcement

7-1. Comment: Allow utilities to correct reporting errors before imposing penalties. Include explicit written acknowledgment that the Executive Director should provide flexibility to obligated entities for possible reporting violations by modifying section 95358(b) as follows: “(b) Each day or portion thereof that any report required by this subarticle remains unsubmitted, is submitted late, or contains incomplete or inaccurate information shall constitute a single, separate violation of this subarticle. The Executive Director must provide an opportunity to correct or resubmit information prior to imposing penalties.” (Utilities Group)

Response: This comment is outside the scope of the 15-day changes; however, see response to Comment H-17 in the 45-day comment responses.

7-2. Comment: Modifications to enforcement provisions should be considered. While the resolution the Board adopted did not call for any specific changes to the regulation other than those already proposed by CARB staff in Attachment B, it did include language allowing additional changes to be considered. In the proposed 15-day language, CARB staff included additional changes beyond those suggested in Attachment B, in part based on the written and oral comments receive as part of the record for this regulation. There appears to be no reason to exclude from consideration a specific issue raised by multiple stakeholders—such as enforcement—on which the Board actually commented during adoption. The enforcement issue should be resolved at this point. (Utilities Group)

Response: ARB staff did carefully consider modifications to the enforcement provisions and looked at the various options presented by stakeholders. Ultimately, for the reasons identified in the responses to the 45 day comments (see Section H, Enforcement), staff does not believe that modifications to the enforcement provisions are appropriate.

7-3. Comment: Penalties for each day of the year are not appropriate for the regulation. This structure leads to potential for penalty amounts that are excessive and out of proportion to the underlying violation with too much reliance on vague flexibility to create reasonable penalties in each case. Lack of knowledge of the actual penalty and dependence upon uncertain enforcement flexibility can lead to significant cost liability to covered entities that must maintain financial market coverage of potential penalties. Considering each day of compliance period to be a separate violation when compliance is based on an average annual emission rate is not an accurate reflection of actual violation.

This penalty structure is not pertinent to the nature of the violation and leads to the potential for onerous penalties as well as significant enforcement uncertainty. (Utilities Group)

7-4. Comment: Any exceedance of the maximum allowable SF₆ emission rate for a given calendar year should be treated as a single violation and not a separate violation for each calendar day. (PacifiCorp2)

Response: These comments are outside the scope of the 15-day changes; however, see response to Comment H-5 through H-8 in the 45-day comment responses.

7-5. Comment: Total penalties may be too low or too high. If a violation of the annual emissions limit is treated as a single violation, the penalty may be as little as \$1,000, which, as CARB staff mentioned at the Board meeting, may not be sufficient to induce compliance. If each day of the compliance period is considered a separate violation, penalties could add up to as high as \$91 million (at the \$250,000 per violation level). As the enforcement language is currently written, these potential low and high penalties could result regardless of whether the annual SF₆ limit is barely violated or the limit is substantially violated, providing significant uncertainty.

Response: These comments are outside the scope of the 15-day changes; however, see response to Comment H-9 to H-16 in the 45-day comment responses.

7-6. Comment: We believe section 38580(c) allows the ARB to develop a much better penalty structure. A penalty structure should be developed that reflects five general principles; 1) be pertinent to the type of violation, (2) be sufficient to induce compliance in most, if not all, cases, (3) be proportionate to the violation for which the penalty is imposed, 4) allow flexibility to handle unusual cases but provide regulatory certainty for the most common violations, and 5) not be so high as to be considered excessive. The penalties should be structured so that the amount or degree of exceedance is defined in units that provide for additional violations the farther away from the compliance target an entity lies. CARB could define a violation of the annual emission limit in terms of excess pounds of SF₆ emissions or in terms of percentage units above the annual limit. (Utilities Group)

Response: This comment is outside the scope of the 15-day changes; however, see response to Comment H-9 to H-16 in the 45-day comment responses.