# FINAL REGULATION ORDER

## PROPOSED AMENDMENTS TO THE REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS

**Amend Division 3, Chapter 1, Subchapter 10, Article 2, Subarticle 1, sections 95101(h)(1)(A)(4), and (h)(1)(B), 95101(i)(4) and (i)(5), 95102, and 95103(h) and (o); Subarticle 3, sections 95111(h), 95115(n)(16), and 95118(e); Subarticle 5, sections 95152(f)(5), (g)(3), and (h)(3), and 95153(b) and (p) and (p)(6)(B), Title 17, California Code of Regulations**

(Note: Set forth below are the proposed amendments to title 17 of the California Code of Regulations (CCR). Amendments to existing sections proposed and subject to comment in this rulemaking are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions. Subsections for which no changes are proposed in this rulemaking are indicated with "* * * *".)

### Article 2: Mandatory Greenhouse Gas Emissions Reporting

### Subarticle 1. General Requirements for Greenhouse Gas Reporting

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**§ 95101. Applicability.**

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(h) *Cessation of Reporting and Verification for Reduced Emissions*. The requirements for facility operators, suppliers, and electric power entities whose emissions are reduced below applicable reporting and verification thresholds are as follows for ceasing reporting and verification. Cessation requirements for facility operators that permanently "shut down" are in section 95101(i).

(1) Reporting Entities Subject to a Compliance Obligation.

(A) Facility operators and suppliers. Facility operators and suppliers that are subject to a compliance obligation under the Cap-and-Trade Regulation must report and verify until covered emissions are less than 25,000 $MTCO_2e$ for an entire subsequent compliance period, or until the reporting entity is no longer a covered entity, except as specified in section 95101(h)(1)(A). If annual covered emissions for a facility operator or supplier exceed 25,000 $MTCO_2e$ in any year after cessation requirements have been met, the operator or supplier must resume verification as required under this article, and the operator or supplier would again have a compliance obligation under the Cap-and-Trade Regulation, and must meet all applicable requirements.

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4. Fuel suppliers that cease to supply fuel in California and whose emissions drop to zero during a Cap-and-Trade compliance period must continue to report ~~and verify~~ until emissions are zero for an entire subsequent compliance period as defined in the Cap-and-Trade Regulation. Pursuant to section 95103(n)(2)(D), entities that cease to have a compliance and/or reporting obligation as a fuel supplier due to a change in ownership or sale or relinquishment of an inventory position at a terminal must continue to report and verify emissions from the reportable fuel transactions that occurred prior to the change. Fuel suppliers that cease to supply fuel in California and no longer have any reportable emissions must verify their emissions data report in the first year in which they report zero emissions. Any reporting year thereafter with zero reportable emissions is not subject to verification.

(B) Electric power entities. Electric power entities that import electricity to California, and therefore are subject to a compliance obligation under the Cap-and-Trade Regulation, must report ~~and verify~~ until the entity has no reportable imported electricity to California, and until the entity is no longer subject to a compliance obligation under the Cap-and-Trade Regulation for an entire subsequent compliance period. Electric power entities that no longer import or export electricity must verify their emissions data report in the first year in which they report zero imports or exports. Any reporting year thereafter with zero imports or exports is not subject to verification.

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(i) *Cessation of Reporting and Verification for Shutdown Facilities*. The requirements for facility operators that cease to operate or permanently shut down as defined in this section are as follows for ceasing reporting and verification.

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(4) If a facility owner or operator meets the requirements for cessation of reporting pursuant to section 95101(i), the owner or operator must continue to obtain the services of an accredited verification body for purposes of verifying the emissions data report for the year in which the facility's GHG-emitting processes and operations ceased to operate. Verification is not required for the emissions data report of the first full year of non-operation that follows. If the reporting entity was not subject to verification before meeting the cessation of reporting requirements pursuant to 95101(i), verification is not required under this section for the year in which the facility's GHG-emitting processes and operations ceased to operate.

(5) Facilities and suppliers with source categories in section 95101(a)(1)(A) that met the cessation requirements under a previous version of MRR must reenter the reporting program and are subject to this subarticle only if their emissions exceed 10,000 $MTCO_2e$ in a calendar year.

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

**§ 95102. Definitions.**

(a) For the purposes of this article, the definitions in subsections (a), (b), and (c) shall apply. Subsection (b) is specific to product data definitions. Subsection (c) is specific to definitions regarding refining and related processes.

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"Electricity exporter" means electric power entities that deliver exported electricity. The entity that exports electricity is identified on the NERC e-Tag as the purchasing-selling entity (PSE) on the last segment of the tag's physical path, with the point of receipt located inside the State of California and the point of delivery located outside the State of California. Electricity exporters include Energy Imbalance Market (EIM) Entity Scheduling Coordinators serving the EIM market that can result in exports from California.

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"Electricity importers" deliver imported electricity. For electricity that is scheduled with a NERC e-Tag to a final point of delivery inside the State of California, the electricity importer is identified on the NERC e-Tag as the purchasing-selling entity (PSE) on the last segment of the tag's physical path with the point of receipt located outside the State of California and the point of delivery located inside the State of California. For facilities physically located outside the State of California with the first point of interconnection to a California balancing authority's transmission and distribution system when the electricity is not scheduled on a NERC e-Tag, the importer is the facility operator or scheduling coordinator. Federal and state agencies are subject to the regulatory authority of ARB under this article and include Western Area Power Administration (WAPA), Bonneville Power Administration (BPA), and California Department of Water Resources (DWR). For electricity that is imported into California through the CAISO Energy Imbalance Market, the electricity importer is identified as the EIM Participating Resource Scheduling Coordinators and EIM Purchasers serving the EIM market whose transactions result in electricity imports into California.

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"Energy Imbalance Market Purchaser" or "EIM Purchaser" means, for a given data year an electrical distribution utility that directly or indirectly purchases any electricity through the EIM to serve California load in the data year, and receives allowance allocation in the subsequent year pursuant to section 95892 of the Cap-and-Trade Regulation. An electrical distribution utility is considered to have purchased electricity through the EIM in a given data year if, during any 5-minute

interval in the data year, the electrical distribution utility serves California load through imbalance energy purchased directly from the CAISO market. An electrical distribution utility is considered to have purchased electricity through the EIM in a given data year if, during any 5-minute interval in the data year, the electrical distribution utility participates in CAISO markets indirectly through a CAISO scheduling coordinator that meets any part of the electrical distribution utility's California load with imbalance energy.

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"Facility," unless otherwise specified in relation to natural gas distribution facilities, gas processing facilities, and onshore petroleum and natural gas production facilities as defined in section 95102(a), means any physical property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.

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"First deliverer of electricity," or "first deliverer" means the owner or operator of an electricity generating facility in California, ~~or~~ an electricity importer, or an EIM Purchaser.

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

**§ 95103. Greenhouse Gas Reporting Requirements.**

The facilities, suppliers, and entities specified in section 95101 must monitor emissions and submit emissions data reports to the Air Resources Board following the requirements specified in 40 CFR §98.3 and §98.4, except as otherwise provided in this part.

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(h) *Reporting in 2018.* All provisions of the regulation are in full effect for 2019~~8~~ data reporting in 20202019 and beyond, except the following:

(1) The requirements of 95101(h) and (i) are effective for 2018 data reported in 2019.

~~(1) Pursuant to section 95103(f), verification of emissions data reports submitted for 2017 data in 2018 must be completed by August 10, 2018. Each year thereafter, verification must be completed by August 10.~~

~~(2) All covered product data reporting must be reported for 2017 data submitted in 2018, and for each subsequent year. Best available methods may be used for~~

~~reporting 2017 data submitted in 2018 for sulfuric acid and boric oxide equivalent.~~

(2~~3~~) The method in section 95153(a) for continuous bleed pneumatic devices applies to 2019 data reported in 2020.

(3~~4~~) The provisions of Subarticle 6 of this article become effective for 2021 data submitted in 2022, if U.S. EPA has approved, as memorialized by publication in the Federal Register and Code of Federal Regulations, that provision as part of California's plan for compliance with the Clean Power Plan.

~~(5) The requirements of section 95111(h) are effective for 2017 data reported in 2018.~~

~~(6) The requirements of sections 95131 through 95133 are effective for 2017 data reported in 2018.~~

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(o) *Addresses*. The following address shall be substituted for the addresses provided in 40 CFR §98.9, and used for any necessary notifications or materials that are not submitted by other means:

Manager, Climate Change Reporting Section
~~Climate Change~~ Program Planning and ~~Monitoring~~Management Branch
Industrial Strategies Division
CALIFORNIA AIR RESOURCES BOARD
P.O. BOX 2815
SACRAMENTO, CA 95812

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

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**Subarticle 2. Requirements for the Mandatory Reporting of Greenhouse Gas Emissions from Specific Types of Facilities, Suppliers, and Entities**

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**§ 95111. Data Requirements and Calculation Methods for Electric Power Entities.**

The electric power entity who is required to report under section 95101 of this article must comply with the following requirements.

*(h) Imported Electricity in the Energy Imbalance Market (EIM).*

(1) *Calculation of EIM Outstanding Emissions*. Each year after the verification deadline in section 95103(f), ARB will calculate "EIM Outstanding Emissions" for the previous calendar year using information reported annually by EIM Participating Resource Scheduling Coordinators with imported electricity in EIM pursuant to section 95111(h)(1)(C), and information received from CAISO under an annual subpoena. Annual information reported by EIM Participating Resource Scheduling Coordinators must be based on the results of each 5-minute interval. In 2019, ARB will calculate EIM Outstanding Emissions separately for the time periods of January 1, 2019 to March 31, 2019, and April 1, 2019 to December 31, 2019.~~;~~

(A) *EIM Outstanding Emissions as calculated by ARB.* "EIM Outstanding Emissions" equals "Total California EIM Emissions" less the sum of "Deemed Delivered EIM Emissions" ~~associated with~~ as reported ~~electricity imported~~ by EIM Participating Resource Scheduling Coordinators in section 95111(h)(1)(C) for a data year ~~deemed delivered to California by the EIM optimization model~~.

*(B) Total California EIM Emissions as calculated by ARB.* Annually, based on each 5-minute interval, ARB will calculate the $CO_2$ equivalent mass emissions associated with imported electricity in EIM using the following equation:

$$CO_2e = MWh \times EF_{unsp} \times TL$$

Where:

$CO_2e$ = $CO_2$ equivalent mass emissions from Total California EIM electricity (MT of $CO_2e$).

MWh = Megawatt-hours of EIM imports used to serve California load.

$EF_{unsp}$ = Default emission factor for unspecified electricity imports in 95111(b)(1)

$EF_{unsp}$ = 0.428 MT of $CO_2e$/MWh

TL = 1.02 (transmission loss factor) in 95111(b)(1).

(C) *Deemed Delivered EIM Emissions Reported by EIM Participating Resource Scheduling Coordinators*. Annually, based on the results of each 5-minute interval, each EIM Participating Resource Scheduling Coordinator must calculate, report, and cause to be verified, emissions associated with electricity imported as deemed delivered to California by the EIM optimization model. For data year 2019 only, EIM Participating Resource Scheduling Coordinators shall calculate, report, and cause to be verified Deemed Delivered EIM Emissions for two time periods. EIM Participating Resource Scheduling Coordinators shall separately calculate, report, and cause to be verified Deemed Delivered EIM Emissions from January 1, 2019 through March 31, 2019. EIM Participating Resource Scheduling Coordinators shall separately

calculate, report, and cause to be verified Deemed Delivered EIM Emissions from April 1, 2019 through December 31, 2019.

(2) *EIM Purchaser Emissions as Calculated by CARB.* Each year after the verification deadline in section 95103(f), CARB will calculate each EIM Purchaser's "EIM Purchaser Emissions" for the previous calendar year using information reported annually by EIM Participating Resource Scheduling Coordinators with imported electricity in EIM, retail sales in MWh reported annually by EIM Purchasers pursuant to 95111(h)(2)(B), and information received from CAISO under an annual subpoena. For data year 2019, this section is applicable from April 1, 2019 through December 31, 2019 using EIM Outstanding Emissions calculated pursuant to 95111(h)(1) for the time period April 1, 2019 to December 31, 2019.

(A) *EIM Purchaser Emissions as calculated by CARB.* For each EIM Purchaser, as defined in section 95102, CARB will calculate the $CO_2$ equivalent mass EIM Purchaser Emissions, using the following equation:

$$EIM\ Purchaser\ Emissions = EIM\ Outstanding\ Emissions * \frac{EIM\ Purchaser's\ Retail\ Sales}{Total\ EIM\ Purchasers'\ Retail\ Sales}$$

Where:

EIM Outstanding Emissions equals the total emissions calculated pursuant to section 95111(h)(1).

EIM Purchaser's Retail Sales equals the EIM Purchaser's total retail sales reported pursuant to section 95111(h)(2)(B).

Total EIM Purchasers' Retail Sales is the sum of all EIM Purchaser's Retail Sales as reported pursuant to 95111(h)(2)(B).

(B) EIM Purchaser's Retail Sales. Each EIM Purchaser's retail sales will equal its annual total California retail sales reported and verified pursuant to this section.

1. Each EIM Purchaser shall calculate, report and verify its annual California retail sales pursuant to this section and sections 95101(h)(2)(D), 95111(c)(1) and 95111(d)(4), as applicable.

2. EIM Purchasers who are investor owned utilities, shall calculate, report and cause to be verified, the name(s) and total California retail sales of each load-serving entity in its electrical distribution service territory.

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

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**§ 95115. Stationary Fuel Combustion Sources.**

The operator of a facility who is required to report under section 95101 of this article, and who is not eligible for abbreviated reporting under section 95103(a), must comply with Subpart C of 40 CFR Part 98 (§§98.30 to 98.38) in reporting stationary fuel combustion emissions and related data to ARB, except as otherwise provided in this section.

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(n) *Additional Product Data.* Operators of the following types of facilities must also report the production quantities indicated below.

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(16) The operator of a dairy product facility must report the production of fluid milk product, butter, condensed milk, buttermilk powder, intermediate dairy ingredients, lactose, whey protein concentrate (WPC), deproteinized whey, cheese by cheese type, milk powder by the type of heat treatment (low heat, medium heat, or high heat), anhydrous milkfat, and milk protein concentrate by product type during the data year (short tons). Butter re-melted and re-introduced to the manufacturing process may be reported <u>again</u> as ~~fluid milk~~<u>butter</u> production. Buttermilk powder and nonfat dry milk and skimmed milk powder that is re-constituted and re-introduced to the manufacturing process may be reported as production. The operator must report the production of total WPC and WPC with high protein concentration using diafiltration process during the data year (short tons). The operator must also report the amount of imported protein.

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

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**§ 95118. Nitric Acid Production.**

The operator of a facility who is required to report under section 95101 of this article, and who is not eligible for abbreviated reporting under section 95103(a), must comply with Subpart V of 40 CFR Part 98 (§§98.220 to 98.228) in reporting stationary combustion and process emissions and related data from nitric acid production to ARB, except as otherwise provided in this section.

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(e) *Site-Specific Emission Factor and Production Data.* The operator of a nitric acid manufacturing facility that determines $N_2O$ process emissions per the requirements 40 CFR §98.223(a)(1) <u>that is subject to a compliance obligation under the Cap-and-</u>

Trade Regulation, must conduct performance tests for each nitric acid train as specified in 40 CFR §98.223(b)(1) at least twice per calendar year, with at least four months between testing events. The results of each testing event for each nitric acid train shall be arithmetically averaged (non-weighted) to compute an annual average site-specific $N_2O$ emission factor for each nitric acid train, and applied to equation V-1 of 40 CFR §98.223(c) to compute annual $N_2O$ process emissions. The operator of a nitric acid manufacturing facility that determines $N_2O$ process emissions per the requirements 40 CFR §98.223(a)(1), but is not subject to a compliance obligation under the Cap-and-Trade Regulation, must conduct performance tests for each nitric acid train as specified in 40 CFR §98.223(b)(1) at least once per calendar year.

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

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**Subarticle 5. Reporting Requirements and Calculation Methods for Petroleum and Natural Gas Systems.**

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**§ 95152. Greenhouse Gases to Report.**

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(f) For underground natural gas storage, the operator must report $CO_2$, $CH_4$, and $N_2O$ from the following sources:

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(5) Centrifugal compressor ~~rod packing~~ venting;

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(g) For LNG storage, the operator must report $CO_2$, $CH_4$, and $N_2O$ emissions from the following sources:

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(3) Centrifugal compressor ~~rod packing~~ venting;

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(h) For LNG import and export equipment, the operator must report $CO_2$, $CH_4$, and $N_2O$ emissions from the following sources:

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(3) Centrifugal compressor ~~rod packing~~ venting;

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

## § 95153. Calculating GHG Emissions.

The operator of a facility must calculate and report annual GHG emissions as prescribed in this section. The facility operator who is a local distribution company reporting under section 95122 of this article must comply with section 95153 for reporting emissions from the applicable source types in section 95152(i) of this article.

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(b) *Non-metered Natural Gas Pneumatic Device Venting*. Through calendar year 2018, the operator must calculate $CH_4$ and $CO_2$ emissions from all un-metered natural gas powered pneumatic intermittent bleed and continuous low and high bleed devices using the following method:

$$E_{nm,i,x} = \sum_1^i \sum_1^x EF_i * T_{i,x} \quad \text{(Eq. 2)}$$

Where:

$E_{nm,i,x}$ = Annual natural gas emissions at standard conditions for all unmetered natural gas powered devices and pumps (in scf).

i = Total number of unmetered component types.

x = Total number of component type i.

$EF_i$ = Population emission factor for natural gas pneumatic device type i (scf/hour/component) listed in Tables 1A, 3, and 4 of Appendix A for onshore petroleum and natural gas production, onshore natural gas transmissions compression, and underground natural gas facilities, respectively.

$T_{i,x}$ = Total number of hours type i component x was in service. Default is 8760 hours; or 8784 for a leap year.

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(p) *Population count and emission factors.* This paragraph applies to emissions sources listed in sections 95152(c)(16), (f)(7), (g)(5), (h)(5), (i)(2), (i)(3), (i)(4), (i)(5), (i)(6), and (i)(10) on streams with gas content greater than 10 percent $CH_4$ plus $CO_2$ by weight. Emissions sources in streams with gas content less than 10 percent $CH_4$ plus $CO_2$ by weight do not need to be reported. Tubing systems equal to or less than one half inch diameter are exempt from the requirements of paragraph (p) of this section and do not need to be reported. Calculate emissions from all sources listed in this paragraph using Equation 27 of this section.

$$E_{s,i} = Count_s * EF_s * GHG_i * T_s \quad \text{(Eq. 27)}$$

Where:

$E_{s,i}$ = Annual volumetric GHG emissions at standard conditions from each component type in cubic feet.

$Count_s$ = Total number of this type of emission source at the facility. Underground natural gas storage shall count the components listed for population emission factors in Table 4. LNG storage shall count the number of vapor recovery compressors. LNG import and export shall count the

number of vapor recovery compressors. Natural gas distribution shall count the meter/regulator runs and the number of customer meters as described in paragraph (p)(6) of this section.

$EF_s$ = Population emission factor for the specific component type, as listed in Table 1A and Tables 3 through Table 7 of Appendix A. Use appropriate emission factor for operations in Western U.S., according to Table 1(A) – 1(C) of Appendix A. EF for meter/regulator runs at above grade metering-regulator stations is determined in Equation 28 of this section.

$GHG_i$ = For onshore petroleum and natural gas production facilities, concentration of $GHG_i$, $CH_4$ or $CO_2$, in produced natural gas as defined in paragraph (s)(2) of this section; for onshore natural gas transmission compression and underground natural gas storage, $GHG_i$ equals 0.975 for $CH_4$ and $1.1 \times 10^{-2}$ for $CO_2$; for LNG storage and LNG import and export equipment, $GHG_i$ equals 1 for $CH_4$ and 0 for $CO_2$; for natural gas distribution, $GHG_i$ equals 1 for $CH_4$ and $1.1 \times 10^{-2}$ for $CO_2$ or use the experimentally determined gas composition for $CO_2$ and $CH_4$.

$T_s$ = Total time that each component type associated with the equipment leak emission was operational in the calendar year, in hours, using engineering estimate based on best available data, assume $T_s$ = 8760 hours <u>(or 8784 hours for a leap year)</u> for section 95152(i)(10).

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(6) Natural gas distribution facilities must use the appropriate emission factors as described in paragraph (p)(6) of this section.

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(B) Emissions from all above grade metering-regulating stations (including above grade T-D transfer stations) must be calculated by applying the emission factor calculated in Equation 28 and the total count of metering/regulator runs at all above grade metering-regulating stations (inclusive of T-D transfer stations) to Equation 27. The facility wide emission factor in Equation 28 will be calculated by using the total volumetric GHG emissions at standard conditions for all equipment leak sources calculated in Equation 26 and the count of meter/regulator runs located at above grade transmission-distribution transfer stations that were monitored over the years that constitute one complete cycle as per (p)(1) of this section. A meter on a regulator run is considered one meter regulator run. Facility operators that do not have above grade T-D transfer stations shall report a count of above grade metering-regulating stations only and do not have to comply with section 95157(c)(16)(T).

$$EF = E_{s,i}/(8760 * Count) \quad \text{(Eq. 28)}$$

Where:

EF = Facility emission factor for a meter/regulator run per component type at above grade meter/regulator run for $GHG_i$ in cubic feet per meter/regulator run per hour.
$E_{s,i}$ = Annual volumetric $GHG_i$ emissions, $CO_2$ or $CH_4$, at standard condition from each component type at all above grade T-D transfer stations, from Equation 26.
Count = Total number of meter/regulator runs at all T-D transfer stations that were monitored over the years that constitute one complete cycle as per paragraph (o)(8)(A) of this section.
8760 = Conversion to hourly emissions (use 8784 for a leap year).

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

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