California Air Resources Board

Frequently Asked Questions Regarding the Verification of GHG Emissions Data Reports

March 2010

Air Resources Board(ARB) staff has prepared this document to address questions raised by facilities, entities, and verifiers as they begin the process to verify emissions data reports as required in ARB's mandatory greenhouse gas (GHG) reporting regulation (Regulation). The Regulation appears at sections 95100-95133 of title 17, California Code of Regulations, and is a set of rules that establishes who must report GHG emissions to ARB and sets forth the requirements for measuring, calculating, reporting and verifying those emissions.

If you have questions regarding any of the answers provided in this document, please contact ARB staff using the email ghgverifiy@arb.ca.gov. Answers to questions pertaining to reporting requirements are available here: http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm. If you need this document in an alternate format (i.e. Braille, large print) or another language, please contact Joelle Hulbert at 916-322-6349 or jhulbert@arb.ca.gov. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service."

General Verification

1. Q: Who can an operator select as a verification body?

   A: An operator may contract with any ARB accredited verification body.

2. Q: If a facility verified its 2008 emissions data report in 2009, is verification required again in 2010?

   A: Yes, the three-year cycle begins in 2010, and the regulation requires all facilities to undergo full verification in 2010 (§95103(c)).

3. Q: Does an accredited verifier need to conduct the site visit?

   A: Yes, an accredited verifier must be present during the site visit. For cement plants, power entities, and refineries, a sector-specific accredited verifier should be present. The requirement of §95131(4)(A-C) can only be met by an accredited verifier. Non-accredited members of the verification team may assist with the site visit.

4. Q: Can a lead verifier that is a subcontractor for a verification team conduct the site visit, or does the lead verifier of the VB have to be present for the site visit?

   A: Any ARB accredited member of the verification team may conduct the site visit, including a subcontractor, lead verifier, or general verifier.

5. Q: What is meant by “less-intensive” verification for operators subject to annual verification?

   A: “Less intensive” verification differs from full verification because data checks in the 2nd and 3rd year of a 3-year verification cycle may be based on the sampling plan from the 1st year of the cycle. Interim year less-intensive verification requires the same level of reasonable assurance from the verifier that the emissions report conforms to the regulation and contains no material misstatement. Less-intensive verification does not require a site visit, but the verifier *may* still need to visit the site if facility modifications have occurred in the past year resulting in new emission sources or if there have been changes to methodologies used in emission calculations as documented in the change log (§95105(c)(12)). For large or complex sites, it is expected that the lead verifier will choose to conduct a site visit every year.

   Less-intensive verification principally focuses on data checks, and can be based on the sampling plan developed for the last full verification. The sampling plan involves a detailed risk assessment of the operator’s emission sources and potential for errors, and thus does not account for significant changes in GHG emission sources or estimation methodology that may have occurred. Relying on a prior sampling plan during less intensive verification does not mean verifiers only recheck the same sources and documents targeted for data checks in prior years. The risk assessments in the sampling plan along with the prior issues logs should help inform the verification team what sources to target for data checks and what documents to review during interim years.

6. Q: Does an informal verification in 2009 count toward the six year verifier cycle?

   A: Yes, an operator may not use the same verification body for more than six consecutive years, and 2009 would count as the first year of the six, even if the first year was informal. The informal verification in 2009 does not start the three year verification cycle and a full verification would be required in 2010 for the 2009 report.

7. Q: Should the verifier evaluate whether the facility is following the recordkeeping requirements or maintaining a GHG inventory program?

   A: The verifier is encouraged to evaluate whether the operator keeps the required emissions data report documentation and maintains a GHG inventory program, most likely during the site visit. The verifier may review document retention policies and the GHG inventory program as part of their review and evaluation of data management systems and the operator’s GHG inventory program. Any lack of recordkeeping or GHG inventory program should be noted in the verifier’s issues log. However, lack of correct document retention or GHG inventory program may not directly

result in a non-conformance adverse verification opinion because recordkeeping and the GHG inventory program are administrative requirements, and do not affect the emissions data report. Only requirements that affect the reported data will be included in the determination of the verification opinion.

8. Q: May a verifier point out areas where more accuracy should be strived for in the emissions report, or does that constitute consulting?

   A: Verifiers may identify measurement techniques or processes where the accuracy could be improved, but may not consult on how the accuracy may be improved. Verifiers may also identify weaknesses in the GHG inventory program that may affect data quality, but cannot give any recommendations about how to address or improve these weaknesses. The verifier should note these instances in the issues log. Identifying weaknesses or areas of improvement falls within the scope of verification services, but any specific recommendation for remedying these would constitute consulting services and create a conflict of interest. The operator is not compelled to obtain more accurate data or make other improvements as long as no material misstatement or a non-conformance with the regulation exists.

9. Q: If an operator is required to obtain triennial verification and no interim less intensive verification was required or performed, is the verifier required to look at the data for the entire three year period?

   A: No, the verifier is not required to check the interim year's data. Only the data for the year of the required full verification is verified.

10. Q: Is the verifier required to check fuel metering?

    A: Yes, if they are used to calculate emissions. The regulation requires that fuel meters used in emissions calculations achieve an accuracy of ±5% (§95103(a)(9)). Verifiers will use the risk assessments conducted as part of their sampling plans to determine which meters will be reviewed in greatest detail.

    The meter must be evaluated for correct type and location, as well as maintenance and calibration records as needed. Original equipment manufacturer (OEM) specification sheets may be reviewed in some cases to check relevant parameters. All meters, including positive displacement, differential pressure, ultrasonic, thermal mass flow, coriolis, and turbine meters have different parameters that must be evaluated by the verifier to determine if the meter is fit-for-purpose. The verifiers also need to check that the appropriate molar volume conversion (MVC) factor is applied to greenhouse gas calculations for gas meters.

11. Q: What happens if a verifier suspects that an operator has knowingly submitted false information to a verification body?

A: The verifier should first contact the operator and determine the reason for the discrepancy. If the verifier still believes that the operator knowingly submitted false information, the verifier should contact ARB staff.

12. Q: Are verifiers and verification bodies subject to enforcement action by ARB?

A: Yes, if the verification body is unable to complete their work by the verification deadline, either because of lack of due diligence, or because they entered into contracts with too many operators, ARB could assess fines or rescind accreditation for non-compliance.

13. Q: If a verifier sees an unrelated breach of environmental law during the verification process, are they required to report it to ARB?

A: No, but professional duty would require the verifier to communicate violations that may cause safety or serious environmental concerns to the operator. Notifying an operator of a serious violation does not constitute a conflict of interest for the verifier.

14. Q: Does the operator need to train people to maintain the GHG inventory program and data QA/QC procedures?

A: While there is no specific requirement for training, the operator must be able to demonstrate to the verifier that reported data is transparent, accurate, and complete (§95104(c)). If the verifier finds this not to be the case, the verifier must note it in the issues log and bring it to the attention of the operator. Without competently trained staff, it is unlikely that the operator will be able to submit an emissions data report that conforms to the regulation and is materially correct. Reviewing the training and qualifications of the staff that developed the emissions data report is a required part of developing a verification plan because it can help verifiers identify high risk areas in the report. Lack of training itself would not result in an adverse opinion; however an adverse opinion may result when the emissions data report is prepared by staff that lacks adequate training. The verifier is not allowed to suggest training or implement a training program.

15. Q: Is the verifier responsible for checking the operator's conformity with the GHG Inventory Program and Data Completeness (internal audit, QA/QC) procedures?

A: Under §95131(b)(4)(B) the verifier must evaluate these systems as part of their verification services. Any concerns about either system should be noted in the issues log. Conformity with the regulation refers directly to the emissions data report and the data used to develop it; therefore, a weak or poorly documented inventory program or internal audit procedures would not directly result in a non-conformance. However, weaknesses in these systems create a higher risk of non-conformance or material misstatement in the emissions data report.

16. Q: If a verifier finds that an operator has used a default emission factor and the operator has the capacity to use more accurate, site-specific data, is there an obligation for the operator to use the more accurate emission factor?

    A: No, if the operator is allowed by the regulation to use the default emission factor, there is no obligation to be more accurate. If they are required by the regulation to use the more accurate (non-default) method, then this would be a non-conformance issue if not corrected, or not identified as *de minimis*.

17. Q: If a verifier finds an error in the emissions data report, is the operator required to fix the error, even though it is not material?

    A: No, there is no requirement in the regulation to fix incorrect emissions data (§95104(d)(1)). However, the verifier is required to describe the error in the issues log. ARB strongly encourages operators to fix all errors where possible.

18. Q: How long should a site visit take?

    A: It will depend on factors such as the size and complexity of the facility and the number of verifiers on site. Many site visits will take one full day, while very simple facilities will take less time, and complex facilities could take several days with at least 2-3 verifiers. Some verifiers may choose to spend most of their time working on-site where information is readily available. Other verifiers may prefer to work in their own office, and the site visit may require less time.

19. Q: Do the years of California Climate Action Registry (CCAR) verification count toward the six-year limit on verifiers?

    A: Yes, the years of verification done for an operator under CCAR prior to beginning ARB mandatory reporting verification count toward the six year limit (§95130(a)&(b)).

20. Q: Do I have to change ARB verifiers when I am required to change CCAR verifiers?

    A: If you are using the same verifier for both the Climate Action Reserve and ARB and you reach the limit of six years with the Climate Action Reserve, then you are required to switch verifiers for ARB as well. Any prior relationship with a verifier in the Reserve will count towards the six year limit in the ARB reporting regulation.

21. Q: How are optional emissions verified?

    A: Optional emissions are reviewed by the verifier, but would not be considered in evaluating conformance with the regulation or materiality

((§95131(b)(5) & (b)(9)(A)). However, any issues regarding the methods used or sources included should be noted in the issues log.

22. Q: How robust does the sampling plan need to be to get to the 95% materiality threshold? Can the sampling plan be weighted to allow verifiers to focus on the most significant sources and not spend as much time on the smaller sources?

    A: The sampling plan contains a ranking of the sources by contribution to total emissions and by calculation uncertainty to guide the verifier in determining which sources to review (§95131(b)(8)(B)&(C) and §95131(b)(9)). The verification team shall use their professional judgment in determining the sample size to provide *reasonable assurance* that the report is free of material misstatement and in conformance with the regulation (§95131(b)(9)(C)).

23. Q: May verification services begin before a facility operator has completed the emissions data report?

    A: Yes, verification may begin as soon as the conflict of interest form has been approved by ARB (§95133(e)(1)). The verification body must not provide any consulting services or aid the operator in submitting the emissions data report.

24. Q: If the verification team determines a second site visit is required or an extension of the original site visit is necessary, does the verification team need to notify ARB?

    A: The verification team would only be required to notify ARB if the verification had been selected by ARB for an audit.

Verification Body

25. Q: If a verification body has only two lead verifiers, and one of the leads leaves the firm during verification, the firm no longer meets the requirement of a verification body. What happens to the verification?

    A: If, during the course of providing verification services, a verification body no longer has two lead verifiers then the verification body no longer is eligible to submit a verification opinion for an operator. The verification body should notify the operator and ARB as soon as possible.

26. Q: Can the verification team include non-accredited “experts” employed by the verification body to assist the verification team?

    A: Yes, the non-accredited expert must be listed in the conflict of interest/notice of verification services (COI/NOVS) form along with the roles

and responsibilities they will have during verification (§95131(a)(1)). A non-accredited "expert" should only be used in an advisory capacity, and not for completing verification tasks.

27. Q: Does the five full-time employee requirement for verification bodies allow full-time equivalent employees using several part-time employees? For example, could a verification body rely on three full-time staff and four half-time employees to meet the minimum five staff? Can staff receive payment based on a commission?

A: Section §95132(b)(1)(A) specifically refers to full-time staff; therefore, full-time equivalents (i.e. two half-time staff) would not satisfy the requirements. Staff can receive payment on commission as long as they are full-time employees. The five staff need only be employed full-time, and all five do not have to be verifiers or participate in verification services.

Verifier Roles – Independent Reviewer

28. Q: Does the lead verifier that conducts the independent review for the verification body (§95131(c)(1)) need to be accredited as a sector specialist?

A: No, only a single member of the verification team must have a sector accreditation if providing verification services for a refinery plant, cement plant, or power entity.

29. Q: Can an independent reviewer participate in a site visit? Can an independent reviewer conduct an interim review before the completion of the verification services in §95131(b)?

A: The independent reviewer may not participate in the site visit with the rest of verification team. The regulation requires that the independent reviewer not be involved with the verification services for that operator during that year. If desired, it would be acceptable for the independent reviewer to tour the facility separately from the rest of the verification team.

An independent reviewer may conduct an interim review of work products such as the verification plan and sampling plan to identify potential issues early on, but cannot be actively involved in drafting or revising these documents. The independent reviewer would still need to conduct a thorough review upon completion of verification services as specified in §95131(c).

Subcontractor

30. Q: Can a sector-specific accredited verifier be a subcontractor?

    A: Yes.

31. Q: Can the independent reviewer or the lead verifier for the verification team be subcontracted?

    A: No, the lead verifier for the verification team cannot be subcontracted by the verification body (see §95102(a)(204)), and the independent reviewer cannot be subcontracted by the verification body (see §95131(c)(1)).

32. Q: When an operator is required to change verification bodies, can a member of the previous verification team be a subcontractor for the new verification team?

    A: No, every member of the new verification team must have not provided verification services for that facility within the past 3 years (§95133(b)(2)).

Verification Opinion

33. Q: What constitutes a positive opinion? Is it both free of material misstatement and in conformance with the regulation? Are these two items separate? Are there some gray areas about how egregious a non-conformance has to be?

    A: A positive opinion requires that the emissions data report is <u>both</u> free of material misstatements <u>and</u> conforms to the requirements of the Regulation. These two requirements are separate, and failure to meet <u>either</u> of these requirements would result in an adverse opinion (§95131(c)(2)(B)). It is possible to have a non-conformance that does not result in a material misstatement in total reported emissions. This would result in an adverse opinion, where the cause of the adverse opinion and a qualifying statement would be included in the verification opinion.

    Conformity is following the requirements set forth in the regulation, and it should be assessed by verifiers as objectively as possible. Examples of non-conformances include: failure to meet fuel meter accuracy requirements, failure to meet data capture requirements, and failure to use a required calculation methodology when specified. A non-conformance at any source at the facility would result in an adverse opinion, regardless of whether the non-conformance affects materiality.

    Sources classified as *de minimis* as described in §95103(6) may use alternative estimation methods, and therefore non-conformances would

generally only result at *de minimis* sources if they were improperly classified as such.

34. Q: Can you clarify how an adverse opinion for ARB is different from an adverse opinion for CCAR?

A: CCAR reporting is a voluntary program, and verification is required for acceptance by the California Registry. Verification opinions for CCAR are based exclusively on materiality, whereas for ARB they are assessed based on both materiality and conformance with the reporting regulation.

The ARB mandatory reporting regulation requires reporting and verification in the context of a regulation. Submission of the verification opinion (§95107(b)) is required for all covered entities. An operator receiving an adverse opinion can petition the Executive Officer to resolve any disputes between the operator and verification body about the verifiability of the emissions data report (§95131(c)(3)(A)). It is critical to have an accurate inventory and ARB will work with the operator to rectify any issues leading to the adverse opinion.

35. Q: What happens if an operator receives an adverse opinion?

A: Adverse opinions will be evaluated on a case by case basis. ARB will work with the operator to rectify the issues for the current year reporting as well as future year reporting. The goal is to have the most accurate inventory possible.

36. Q: Are there penalties for missing deadlines?

A: The Regulation includes penalties for missing the reporting and verification deadlines (§95107).

37. Q: What do I put in the qualifying comments on the verification opinion form?

A: The qualifying statement should include any information the verifier feels is critical for ARB to know with regard to the opinion. For example, if an adverse opinion is issued due to a non-conformance, the verifier could identify the non-conformance in the comments. Alternatively, if a positive opinion is issued, the verifier may choose to identify issues that do not result in a material misstatement or non-conformance, though this is not required. The qualifying comments must also be provided to the operator (§95131(c)(2)(A)).

38. Q: What happens if a verification body and an operator are unable to resolve a dispute regarding the verification opinion?

A: The operator may petition the ARB Executive Officer to make a final decision on the verifiability of the emissions data report (§95131(c)(3)(A)).

Conflict of Interest

39. Q: Can a verification body provide verification services for one facility for six years, and then shift to another facility owned by the same corporation for another six years?

    A: The limitations in §95130(a) and (b) on the number of consecutive years that a verification body can be used apply to the operator and not the owner of the facility. If the two facilities are operated by different entities, §95130(a) and (b) would not prohibit the verification body from providing verification services at the second facility after working six years at the first facility. If the two facilities share operational control -- for example, if the common owner operates both facilities -- the operator could not hire the same verification body for at least three years after hiring the verification body for a six-year period at another of its facilities. The operator is the entity having authority to implement operational, environmental, health and safety policies (§95102(a)(140)). Please contact ARB for further clarification.

40. Q: Is conflict of interest between an operator and a verification body reviewed at the facility level or at the corporate level?

    A: Conflict of interest is reviewed at the facility operator level. The operator is the entity having authority to implement operational, environmental, health and safety policies (§95102(a)(140)). Depending on the organization, operational control may be at the facility or a corporate level. If there are two facilities within an organization with local operational control, then conflict of interest is reviewed between the verification body and each facility separately.

41. Q: Are gifts considered a conflict of interest?

    A: Gifts between anyone on the verification team and anyone affiliated with the operator are considered a potential conflict of interest and should be disclosed in writing to ARB (section §95133(g)(1)). However gifts, including meals, aggregating less than $30 in a calendar month from a single operator would not need to be reported.

42. Q: Does past California Environmental Quality Act (CEQA) work that involves some project-related GHG impact analysis for the operator constitute a high conflict of interest?

    A: Yes, this would constitute greenhouse gas related engineering analysis which falls under the high conflict of interest (§95133(b)(2)(B)).

43. Q: Would a California Environmental Quality Act project where the only GHG analysis was related to construction equipment emissions be considered a high conflict of interest (COI)?

A: Yes, this would constitute greenhouse gas related engineering analysis which falls under the high conflict of interest (§95133(b)(2)(B)).

44. Q: What is meant by “managing any health, environment or safety functions” in the list of high COI activities that any member of the verification body or related entity cannot have provided in the last three years (§95133(b)(2))?

A: This relates to any activities where a member of the verification body or related entity has assisted the operator in actually managing health, environment, or safety (HES) functions. This may include activities related to product safety, hazardous materials management, dangerous goods management, industrial hygiene and safety management, occupational health, waste management or any similar or related activities. If a member of the verification body assisted the operator in managing or overseeing HES programs, in developing HES management procedures, or in developing electronic HES data management systems, this would constitute a high COI. However, other HES assessments, studies, or compliance consulting that does not involve the management of the HES functions would not constitute a high conflict of interest, but would likely fall under a medium COI.

45. Q: Can an accredited verifier or verification body provide consulting services to a facility within 1 year of providing verification services for that facility and still maintain their accreditation as a verifier or verification body?

A: A verifier or verification body may provide consulting services; however, the verification body and operator risk the verification opinion being invalidated by the Executive Officer, The verification body is responsible for monitoring potential conflicts of interest for a period of one year after the completion of verification services. The verification body must notify ARB’s Executive Officer within 30 days of entering into a contract with an operator (to provide consulting services, or as an employee) if the verification body has provided verification services within the previous year. If this process is not followed, the verifier or verification body risks losing their accreditation.

46. Q: If a verifier has acted as a consultant for an operator in compiling a non-greenhouse gas emissions inventory within the last three years, is it a high COI?

A: As long as the inventory did not contain any greenhouse gas emissions or any other functions specifically listed in §95133(b)(2), the conflict of interest would most likely be medium depending on the value of the services provided (see §95133(c)). Medium conflict of interest requires a mitigation plan to be submitted to ARB in order for the verification to move forward, and requires any individual with a potential COI to be removed from the verification team.

47. Q: Does the performance of an Environmental Management System (EMS) audit give rise to a high conflict of interest?

    A: Yes, see §95133(b)(2)(G)&(I).

48. Q: How much detail do verifiers need to give operators about discrepancies that are uncovered?

    A: The verifier needs to communicate clearly to the operator what the discrepancy is and how they arrived at identifying the discrepancy without telling them how to remedy it. In some cases, the operator may be able to explain the issue, and the verifier may agree that there is not a discrepancy.

49. Q: If a lead verifier reviews information provided by an operator with the intention of entering into contract with that operator, is the verifier disqualified from conducting the independent review of the verification team's services and findings (§95131(c)(1))?

    A: No, simply reviewing information would not disqualify the independent reviewer even if the response includes reviewing the emissions data report, references to person hours, the verification team or any other relevant information.

50. Q: If a medium conflict of interest is determined, what is ARB's process for evaluating the verifications body's risk mitigation proposal?

    A: The risk mitigation proposal will be evaluated against sections §95133(d) and §95133 (f)(4). The Executive Office will consider the nature of the previous work, the relationship of the verification body with the operator, the cost of the services performed, the degree affected individuals have been insulated, and any other information to ensure the potential conflict of interest has been mitigated.

51. Q: For how many verification cycles can an operator subject to triennial verification use the same verification body before it is required to rotate?

    A: Two verification cycles or six years assuming that the verification body had not preformed CCAR verifications for the facility during the previous three years prior to beginning the verification cycle. If verifications for CCAR have been done in the previous three years, the years of CCAR verification would be included in the six years.

Number of Years as CCAR Verifier	Number of ARB Triennial Verifications Allowed
1	2
2	2
3	1
4	1
5	1
6	0

Publicly Available Documentation

52. Q: Is the verification opinion form a public document?

    A: Yes, the verification opinion form is considered public information.

Definitions

53. Q: What does ARB mean by “transparency” of emissions data?

    A: Operators are required by the regulation to have a transparent GHG Inventory Program (see §95104(b)&(c)), and are required to make all information used to calculate emissions and develop the emissions data report available to the verification team (see §95131(b)(6)). Operators must provide “transparency” to the satisfaction of the verifier; allowing them to clearly understand how emissions were calculated and relevant data was collected. If the verifier cannot fully understand a data management process or an operator’s internal system related to GHG emissions after due diligence, the verifier could find that there is a non-conformance, and would provide a negative verification opinion.

54. Q: What is meant by “original documents” in §95131(b)(3)?

    A: “Original documents” does not necessarily refer to the first version of a document. It refers to the fact that verifiers should be looking at original bills, invoices, reports, log books, contracts, purchase records, forms, or similar document from a utility, lab, or other inside/outside service provider rather that relying on the values imputed into a spreadsheet when performing the verification.

Conformance and Materiality

55. Q: What should a verification body do if it discovers a non-conformance that cannot be corrected?

A: It is the verification body's job to assess conformance with the requirements of the reporting regulation – verification bodies are not hired to render positive opinions, but to impartially render the correct verification opinion. While many non-conformance issues can be corrected by the verifier before the verification deadline, in some cases corrections may not be possible. For example, if an operator did not collect required data or used inaccurate fuel meters, it will generally be impossible for them to correct those issues. If a non-conformance is discovered that cannot be corrected, the verification body is still responsible for completing the verification services, assessing materiality, and issuing a verification opinion. The effect of the non-conformance on materiality would still need to be assessed.

If there is uncertainty regarding what constitutes a non-conformance, the verification body should contact ARB. If the operator disagrees with the verification body's findings, they may petition the Executive Officer to make a final decision.

56. Q: If the reporter has not followed the correct calculation methods and there is no way for the verifier to determine if there is a material misstatement, is the verifier then forced to submit an adverse verification opinion?

A: Not using the correct calculation methods will lead to a non-conformance adverse opinion. If the verifier does not have reasonable assurance that no material misstatement is present, that also results in an adverse opinion and will be indicated in the verification opinion form.

57. Q: What happens if a verifier finds a material misstatement in a calculation, or a non-conformance, from an emissions year preceding the emission data report currently being verified?

A: If a verifier uncovers a material misstatement or a non-conformance in the course of providing verification services for a previous year's emissions report, the verifier should note it in the issues log and notify the operator. For errors found in an unverified report for operators under the triennial verification cycle, the operator may correct the errors subject to ARB approval (§95104(d)(2)). For operators subject to annual verification, the operator may correct the erroneous report and have it re-verified.

58. Q: If a material misstatement is found in a subsequent reporting year, will previous years be required to be revised and re-verified?

A: No, unless the facility is audited by ARB staff and a request is made to the facility to resubmit the previous report.

59. Q: How is materiality evaluated for purchased electricity and thermal energy (purchased heat/steam/cooling) for facilities required to report these purchases?

A: Purchased thermal energy is not evaluated for materiality under the regulation, so only purchased electricity would be evaluated independent of other emissions (§95102(113) and §95131(b)(11)). For power entities, the verifier is required to conduct a risk assessment of how the electricity transactions are tracked and reported, followed by a detailed check of a subset of transactions to determine if any material misstatement in the amount of reported transactions exists (95131(b)(9)).

60. Q: Is a verifier required to provide an adverse opinion for a facility with an unverifiable emissions source (>20% missing data)?

A: Yes (see §95103(a)(8)(A)). This is a non-conformance, unless the source is identified as *de minimis* and the method used to calculate emissions is reasonable (§95103(a)(6)).

61. Q: If a source is unverifiable due to >20% missing data, is it included in materiality evaluations?

A: Yes. Materiality is assessed based on total reported facility emissions, and this source would have been included in these emissions. A verifier would assess the affect of the unverifiable source on materiality based on available data. The verifier should first determine if the data is truly missing and not available from another source. If it is truly missing, the verifier can use professional judgment in how to best estimate the missing data. Some examples would be: back-calculation from other data, trending, engineering judgment or conducting a bounding calculation of highest and lowest possible emissions for the source during the reporting year based on captured data. If the uncertainty in the actual emissions for the unverifiable source is enough to potentially result in a 5% error in total reported facility emissions, then the verifier would not be able to state with reasonable assurance that the report is free of material misstatement in the verification opinion. The equation for determining materiality is located in ARB's Instructional Guidance for Operators and Verifiers.

62. Q: Is non-conformity with the fuel analytical data capture requirement missing 20% of the total fuel data, or 20% of the data from an emission source?

A: Non conformity is missing 20% of the data for any parameter (i.e. mass, volume, flow rate, heat content, carbon content) used in emission calculations for each emissions source. See §95103(a)(8)(A).

63. Q: What should the verifier do if a meter is out of calibration?

A: Any meter out of calibration should be noted in the issues log and brought to the attention of the operator. For conformity with the regulation, all fuel

use measurement devices used to calculate emissions must be maintained and calibrated to achieve an accuracy of ±5% (§95103(a)(9)). Therefore any meter that collected data used in emissions calculations with accuracy less than 95% would be considered out of conformity. Process unit meters that have accuracy less than 95%, and are not used for fuel use measurement, would not be a non-conformance.

64. Q: What is the consequence of an operator over-estimating emissions?

A: An operator who reports emissions that are not within ±5% of actual emissions would have a material misstatement in the data and receive an adverse verification opinion. The reporting regulation requires accurate reporting of GHG emissions. Overestimating emissions in an attempt to be "conservative" is not acceptable.

65. Q: Does a verification body still issue an adverse opinion if the non-conformity is immaterial (i.e. does not result in a material misstatement)?

A: Yes, conformity and materiality are independent of each other when issuing the opinion.

66. Q: If a meter is non-conformant, is it automatically a material misstatement?

A: No, materiality is based on the total reported emissions. If the emissions calculated from the non-conformant meter are not large, inaccuracies resulting from the faulty meter may not rise to the level of a material misstatement. A verifier may do a bounding calculation based on a conservative estimate of the meter's accuracy to assess its affect on materiality.

67. Q: Once it is determined that a meter is in conformity with the regulation, is it assumed it be 100% accurate?

A: As long as there is no other evidence to suggest an error in the data from the meter, and the meter meets the accuracy requirements specified in the regulation and has been maintained and calibrated as required by the manufacturer, data collected from the meter would be assumed to be 100% accurate. The inherent uncertainty of fuel meters is not included in materiality assessments.

68. Q: If an operator did not report a boiler that only emitted 1% of the total emissions would this be a non-conformance?

A: For non-electricity generating facilities, the operator is not required to report the individual boiler fuel usage unless it is separately metered. Emissions can be calculated from fuel usage at the facility level for general combustion sources. Fuel usage at the facility level would include the boiler's fuel usage. If the boiler is on an independent fuel line and its fuel usage was not counted in the total facility fuel usage, it would not be in conformance

with the regulation even though it is not a material misstatement. Section 95103(a)(2) requires the operator to monitor and report fuel consumption for the facility, and for each process unit or group of units where fuel use is separately metered. Verifiers are required in §95131(b)(5) to identify all emission sources and ensure all applicable emission sources have been included in the inventory.

For electricity generating facilities, the regulation requires emissions from electricity generation to be separately reported from non-electricity generating sources. In this case, if the boiler is not *de minimis*, a meter must be capable of measuring emissions only from electricity generation to ±5%. This may require installation of a meter to account for fuel flowing to the boiler and to the generation equipment if the boiler or other emitting activity is not involved in the generation of electricity.

69. Q: In the event of a fuel analytical data monitoring equipment breakdown, does the 30 days to request an interim data collection procedure begin on the date the equipment breaks down or the date the breakdown is discovered?

A: The 30 day time-period starts from the date of equipment breakdown (§95103(a)(10)(B)).

70. Q: What happens if an analytical data monitoring equipment breakdown is not discovered until after the 30 days for requesting an interim data collection procedure has passed?

A: If it ultimately results in >20% of the data not being captured, it would be a non-conformance.

71. Q: Is the verifier responsible for verifying the non-emissions information required in §95104(a) of the regulation?

A: For §95104(a), the verifier should check that the information required in §95104(a)(1-4) has been included in the emissions data report. For these items, it is sufficient for the operator to accurately fill in the relevant reporting tool boxes. The geographic location, the longitude and latitude of the facility, may be checked with a GPS unit or online tools such as Google Maps. The information required in §95104(a)(5-7) and §95104(a)(9) is detailed, when applicable, in the sector reporting requirements in §95110-95115, so verifiers do not need to separately verify this information under §95104. Verifiers also do not need to review the parent company information required in 95104(a)(8); it is excluded from verification under §95104(a)(8)(e), and ARB will ensure that either the facility/entity or the parent company has reported the required information.

The certification required in §95104(a)(10) is fulfilled when the operator certifies and submits the emissions data reported in the tool, so this will

have been completed before the emissions data report can proceed to the "verification ready" status.

Cement

72. Q: Can you clarify if the feedstock materials for making cement have to be weighed to ±5%?

    A: Cement feedstock materials do not need to be weighed with an accuracy of ±5%. The mass of clinker and cement kiln dust not recycled do not have to be measured within ±5% because this material is not a fuel and therefore not subject to §95103(a)(9). However, if the weighing method has a high uncertainty it may impact materiality.

Power Entities

73. Q: How do you measure conformance and materiality for electricity transactions?

    A: For conformance, the verifier should evaluate issues such as whether the operator properly aggregated purchases and sales, and that the correct kinds of transactions are reported. For materiality, the verifier should determine if the total reported purchases, sales, imports or exports of electricity (in MWh) are within the 95% accuracy required in the regulation.

74. Q: At an electricity generation facility, emissions are reported at both the facility and the individual generating unit level. The facility level emissions can be inputted directly or summed from the unit level inputs. Can the facility switch between the two methods once one has been selected?

    A: Yes, the facility may switch between the two methods for reporting emissions. In the reporting tool, emissions are either summed at the facility level and reported as supplemental at the unit level, or summed at the unit level and reported as supplemental at the facility level. A year-to-year change to the method of reporting emissions should be noted in the change log (§95105(a)(12)) by the operator.

75. Q: Can a facility that is required to report both emissions and electricity transactions utilize a different verifier for emissions and transactions?

    A: An operator that is a power entity and has operational control over other facilities could choose a single verifier, or have separate verifiers for emissions and transactions. Emissions are verified at the facility level, and transactions are verified at an entity level. Electricity transactions require a sector specialist.

76. Q: If I am a retail electricity provider and do not own or operate any generation facilities am I still required to obtain verification?

A: Yes.

Methodology

77. Q: Can an operator change emission calculation methods during the year, or in subsequent years?

A: For some fuels, the regulation provides the operator with several choices of fuel-based methods from which to report stationary combustion emissions. The use of more than one method in a given year is acceptable, and year-to-year changes are also acceptable, as long as the operator follows the specified reporting requirements for each fuel type. However, the verifier may want to investigate why different methods were used in order to better understand the facility's emissions sources. Any change in methodology must be documented in the change log (§95105(a)(12)).

78. Q: When should calculations be rounded?

A: As a general rule, it is good practice to round digits only at the very end of emission calculations to the nearest metric tonne. Verifiers may assess rounding errors during their data checks.

79. Q: What happens if the Original Equipment Manufacturer's specifications are unavailable?

A: The facility operator may use industry standards, and API guidelines for most meters.

80. Q: Why are there two standard temperature and pressure conditions listed in the regulation, and which one do I use?

A: The two standard temperature pressure conditions identified in the regulation are 20 degrees Celsius (68 degrees Fahrenheit) and absolute pressure of 760 mm of mercury or 60 degrees Fahrenheit and 1 atmosphere (§95102(181)). The operator is free to use whichever condition their meters report. If the operator is allowed to use the default emission factors or heating values, no conversion is required.

81. Q: If an operator reports fuel consumption for an emissions calculation using the stock method described in §95115(a)(2)(A), does it still need to meet the ±5% accuracy requirement.

A: Yes. Unless the emissions are listed under de minimis, all fuel use measurements for emissions calculations must be within ±5%

(§95103(a)(9)). For the measurement of a pile of solid fuel (coal, biomass, etc.), the operator must show that their survey methodologies meet this requirement.

82. Q: If an operator is missing less than 20% of the fuel analytical data, how is the operator supposed to report this data, and what are the obligations of the verifier in analyzing this data?

A: If less then 20% of the data is missing, and it is not being reported under de minimis or subject to the requirements of 40 CFR 60 or 75, the operator will substitute the missing data with the mean of the year's captured data. If the operator follows this methodology, the verifier would accept data to substitute for the missing this data as accurate and not be required to consider uncertainties associated with using the mean value to substitute for missing data when evaluating materiality. However, the effect of inaccuracies in the captured data should be taken into account. For example, if a verifier discovers a systematic error affecting the captured data, the systematic error would also affect the mean of the captured data which is used to fill in missing data.

CEMS

83. Q: If a generating facility is subject to 40 CFR Part 75 and required to report Part 75 CO_2 emissions to ARB as specified in section 95111(c), is a verifier responsible for checking conformance with Part 75? Can the verifier assume that if U.S. EPA has accepted the data, the data will be accurate and in conformance with ARB's regulation?

A: If an operator follows 40 CFR Part 75 to calculate their CO_2 emissions as specified in §95111(c), the verifier is responsible for assessing conformance with the applicable methods for calculating emissions in Part 75. This includes both fuel-based methods and CEMS methods under Part 75. When fuel-based methods are used, assessing conformance includes ensuring that parameters such as heating value and/or carbon content have been sampled at the frequency required by Part 75. Depending on fuel type, Part 75 may allow more than one option for calculating CO_2 emissions, and a verifier should ensure that the operator's calculations conform to one of the accepted options (though not necessarily the most accurate option). If the verifier identifies errors in Part 75 calculations, this will be included in the verification findings and potentially affect materiality regardless of whether U.S. EPA has accepted the data.

Fugitive SF_6 Emissions

84. Q: Is there a mechanism for verifiers to notify ARB if there's a potential source of SF_6 that is not being reported?

A: If a facility has reported a source of SF_6, and there is also another source of SF_6 near the facility that is not maintained by the operator (and is therefore not required to be reported), the verifier should consider making ARB staff aware (via ghgverify@arb.ca.gov) of a potential source of SF_6 that must be reported by the power entity responsible for the maintenance of that equipment. If a facility does not report any SF_6, it is not necessary for the verifier to notify ARB of any potential undercounting of nearby sources of SF_6.

85. Q: How will the verifier determine if the operator has maintenance responsibility for equipment that contains SF_6?

A: The verifier may make a note in the findings log that the operator claims not to have responsibility for reporting a nearby SF_6 source. ARB will investigate issues related to SF_6 reporting.

86. Q: What happens if an electricity generating facility has not tracked SF_6 and is using a mass balance approach because the opening stock is often going missing?

A: If the data required to calculate the SF_6 emissions based on §95111(f) is missing then it is a non-conformance, unless the emissions are *de minimis* and can be calculated by another reasonable method.

Biomass

87. Q: Are biomass-CO_2 emissions included together with the other emissions in evaluating materiality, evaluated separately, or not all?

A: Biomass emissions are included with all other emissions when considering materiality (§95102(113) and §95131(b)(11)).

88. Q: Are biomass-CO_2 emissions included together with the other emissions in calculating the 3% *de minimis* threshold?

A: Biomass emissions are included with all other emissions when setting the *de minimis* threshold (§95103(a)(6)). The reporting tool automatically calculates the 3% threshold and displays the value in the De minimis Emissions section of the verifier's report.

89. Q: What does bone-dry mean?

A: "Bone-dry" means biomass (usually in chipped form) at zero percent moisture. The mass of bone-dry biomass is determined by sampling the load of fuel for moisture content and then converting to a dry-basis measure such as bone-dry tons. If moisture content is not measured for every fuel

load, average moisture content may be used, subject to verifier review. Typically biomass collected and processed in the forest is delivered "green" to the end use facility at 50% moisture. Therefore it is important for a verifier to review this calculation if the facility burns a large quantity of biomass.

Fuel-use

90. Q: Can fuel invoices be used if the invoice is an estimate of actual fuel usage?

A: If there are no installed devices for direct measurement of fuel consumption, the fuel consumption can be calculated using invoices and the equation in §95115(a)(2)(A). Fuel invoices are assumed to be accurate within ±5%. Where fuel use invoices are estimated by the fuel provider, the operator should determine how close the actual fuel usage is to the estimated invoice amount, to the satisfaction of the verifier.

91. Q: Does the 5% accuracy requirement apply only to fuel meters? What constitutes a fuel meter for the purposes of assessing its accuracy?

A: Section 95103(a)(9) requires that the operator employ <u>procedures</u> for fuel use data measurement to achieve an accuracy of ±5%, and that fuel use measurement <u>devices</u> be maintained and calibrated in a manner required to achieve this level of accuracy. Thus while fuel meters may be the most common type of fuel use measurement device, this requirement applies broadly to all procedures or devices that measure fuel use (mass or volume flow) when the data is used in emission calculations. It includes weigh scales and measurements of stocks changes of solid, liquid, or gaseous fuels.

For the purposes of assessing meter accuracy, a meter consists of everything up until the data enters an electronic data management system, including the measuring device itself, piping around the meter to ensure developed flow, pressure and temperature probes, electronic sensors or readouts, wiring or signals connecting to a data collection device, and any other equipment required to report the data within ±5% accuracy at the standard temperatures and pressures listed in the regulation. A verifier should take into account the inherent meter design accuracy, installation location, ongoing calibration and maintenance, operating conditions, etc. For example, if a gas flow meter is designed to measure a pressure difference to a high degree of accuracy, but it does not measure and correct for temperature, a verifier would need to assess the effect of this on the meter's overall accuracy. Similarly, it would not be able to achieve the design accuracy if it is not installed in a location consistent with the original equipment manufacturer specifications, or if it is measuring flows at temperatures and pressures outside of its optimal design range.

[Last page]