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November 15, 2013

Ms. Mary Nichols – Chair, California Air Resources Board
1001 I Street
PO Box 2815
Sacramento, CA 95812

RE: Comments Regarding Proposed 15-Day Modifications to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions - "ghg2013" docket
(Submitted electronically to http://www.arb.ca.gov/lispub/comm/bcsubform.php?listname=ghg2013&comm_period=1)

Dear Ms. Nichols:

Air Products is a global, Fortune 250 company that supplies atmospheric, process, medical and specialty gases, specialty chemicals and process equipment serving a diverse range of industries, including primary metals, refining, electronics, food and glass sectors, as well as healthcare and many other general manufacturing industries. Air Products has over 400 employees and 30 locations in California, including numerous atmospheric gases (oxygen/nitrogen/argon) and hydrogen production facilities, electronic specialty gases and materials production and electricity generating facilities. In addition, Air Products serves a fleet of hydrogen fueling stations across the state, facilitating the transition to carbon-free transportation.

Air Products welcomes the opportunity to submit comments regarding the proposed 15-Day Modifications to the Mandatory Reporting Regulation (MRR) as issued on 28 October 2013. Further, we ask ARB to reconsider some aspects of the MRR amendments approved by the Board on October 25, 2013.

We currently report GHG emissions and associated production data for five hydrogen plants in California (and twenty more plants outside California under the US EPA MRR). From this perspective of multiple years of reporting under these programs, we offer the following comments and concerns regarding the potential changes to the CA MRR program.

KEY CONCERNS:

1. ***Air Products recommends the inclusion of the CWB factor for gaseous hydrogen production in the Table 1 of §95113(l)(3). Further, the reporting obligation for all hydrogen production (refinery-owned and merchant-owned facilities) should be in units consistent with the CWB factor for hydrogen.***

2. ***Air Products recommends eliminating the requirements for reporting the nature and reasons for year-on-year GHG emissions changes and recommends explicitly stated protection of any such disclosure as Confidential Business Information.***

3. ***Air Products <u>does not</u> support adding a requirement for hydrogen producers to provide carbon and hydrogen content for all feedstocks. Such a requirement adds compliance costs with no material gain toward informing the overall state GHG emission inventory.***

4. ***Air Products <u>does not</u> support adding a requirement to report CO_2 and CH4 emissions from waste gases directed to hydrogen plant flare systems.***

DETAILED DISCUSSION of KEY ISSUES & CONCERNS:

1. ***Air Products recommends the inclusion of the CWB factor for gaseous hydrogen production in Table 1 of §95113(l)(3). Further, the reporting obligation for all hydrogen production (refinery-owned and merchant-owned facilities) should be in units consistent with the CWB factor for hydrogen.***[§95113(l)(3)]

   ARB is still considering alternative approaches for the benchmark derivation and allocation of allowances for hydrogen production under the cap & trade program. Both Air Products and the Western States Petroleum Association (WSPA)[1] have included recommendations in their respective formal comments that the ARB base the hydrogen allocation on the CWB approach. As such, the MRR needs to be modified to allow for the proper data collection to support this possible cap & trade program approach.

   Reporting hydrogen production according to the CWB methodology requires the inclusion of the relevant hydrogen production CWB factors in Table 1 of §95113(l)(3). The CWB factor for hydrogen should be those included in the report[2] prepared by Solomon Associates on behalf of WSPA and submitted to CARB in May 3013. Appendix C "Comparison of CWB and CWT Factors for Process Units (CA-CWB vs. Solomon EU CWT)".

   Hydrogen factors include:
   - Steam-Methane Reforming – 5.7 CWB/k SCF/cd
   - Steam-Naptha Reforming – 6.7 CWB/k SCF/cd
   - Partial Oxidation – 7.1 CWB/k SCF/cd

   For consistency, ARB should also require all "on-purpose" hydrogen production to be reported in "k scf", units consistent with the hydrogen CWB factor [§95113(l)(3)(A)]

[1] "WSPA Comments on October 7, 2013 Refiner Workshop" as posted to public comments section of the "ghg2013" docket, specifically, http://www.arb.ca.gov/lists/com-attach/28-ghg2013-BXJRJFwtUWNSC1U2.pdf

[2] "Report on CWT-CWB for California Regulatory Support", Prepared for Western States Petroleum Association (WSPA) by Solomon Associates, 17 May 2013.

2. ***Air Products supports the narrowing of the requirements for reporting the nature and reasons for year-on-year GHG emissions changes and recommends explicitly stated protection of such disclosure as Confidential Business Information.***

   Air Products supports the elimination of the proposed reporting obligation related to year-on-year changes in criteria pollutants and air toxic contaminants, as these pollutant emissions are not necessarily directly linked to greenhouse gas emissions variability. However, the proposed replacement of this requirement with a new requirement to disclose underlying reasons for year-on-year changes in GHG emissions retains many of our concerns related to protection of confidential business information (CBI).

   First, it is not clear why this disclosure is warranted, as it does not inform the state's overall emission inventory nor facilitate compliance under the cap and trade program. Second, the information sought provides insight to competitors and customers about commercial (production volume changes) and operational (process and/or raw material changes, efficiency changes, etc.), information that is commonly accepted as CBI. We are concerned that, due to the bases of the information sought, some parties could interpret such a disclosure to be considered "emission data" and therefore not eligible under California regulation for a claim of public disclosure protection as confidential.

   Air Products strongly recommends that ARB eliminate the entire §95104(f) in the proposed rule. If ARB is not otherwise persuaded to eliminate this reporting requirement, they should, at a minimum, explicitly state the inherent confidentiality of such disclosures and the agencies intent to automatically treat such information as confidential and provide the full protection allowed under California law.

3. ***Air Products <u>does not</u> support adding a requirement for hydrogen producers to provide carbon and hydrogen content for all feedstocks. Such a requirement adds compliance costs with no material gain toward informing the overall state GHG emission inventory.*** [§95114(e)(1)]

   This issue was considered under the 45-day amendments and Air Products acknowledges that staff did reduce the sampling burden for other gaseous fuels from an initial proposal of daily, to monthly. Nevertheless, this requirement increases the cost of compliance for hydrogen production facilities in the following ways:

   a. Facilities that made the irrevocable decision (under 40CFR98) to employ CO_2 CEMS, consistent with 40CFR98.163(a), made such investments as a means to avoid the more significant costs associated with sampling, analyzing, and measuring the flow of multiple fuel and feedstock streams used to produce hydrogen at that facility. Both US EPA and the CA ARB have accepted CEMS emissions determinations for compliance reporting.

      While the capital, operating, calibration and maintenance costs for proper operation of a CO_2 CEMS is also significant, the "elegance" of a CEMS approach is that it does not require the multiple sampling, analysis flow measurement, and data handling tasks (and costs). Under the October approved §95114(e)(1)(A) amendments,

monthly analysis for carbon and hydrogen content is required for all gaseous feedstocks, including natural gas. Typical natural gas supplier data, even when available monthly, does not provide hydrogen content values, necessitating sampling and analysis for even a stream that has negligible hydrogen content and variability from standard specification values. This requirement to sample and analyze gaseous feedstock streams adds compliance costs - sampling, shipping, contract lab analysis, and data management requires in excess of $500 per sample – so characterization according to §95114(e)(1)(A) standards results in an additional cost of $6,000 per year for each feedstock. Costs for installing and maintaining feedstock flow measurement devices (needed to calculate the carbon and hydrogen content of the feedstocks as a "weighted average") further increase the capital, calibration and maintenance costs to satisfy the feedstock characterizations required under the approved §95114(e)(1)(A) amendments.

The currently approved amendment to the MRR requires facilities that have already committed to a CEMS approach to incur these large, redundant costs to characterize their feedstock streams. These added costs are particularly unwarranted because the information the ARB will garner from the characterization of feedstocks will not effectively inform either their statewide emission inventory or support their efforts to derive and administer allowance allocation benchmarks under the cap & trade program. Air Products engaged ARB staff in an attempt to determine how feedstock characterization data will enhance the ARB's understanding/quality of the components of AB-32, but cannot ascertain any such benefit. Suggestions that theoretical calculations from hydrogen production and feedstock data will be useful, ignore the realities of process variability, equilibrium limitations of the chemical reactions taking place, process-critical recycle streams employed, degradation of catalyst activity over time, equilibrium limitations of crude hydrogen purification and numerous other real-world process deviations from theoretical or stoichiometric calculations as to render such "academic" exercises useless.

b. For facilities that chose to comply with the MRR using the fuel and feedstock mass balance approach, §95114(e)(1) indicates only carbon content and molecular weight determinations are required, which is consistent with the data required to calculate the GHG emissions according to 40CFR98.163(b).. Air Products recommends that ARB modify the language of §95114(e)(1)(A) to clearly articulate that the requirement to characterize feedstock hydrogen content does ***not*** extend to facilities that are not monitoring CO2 emissions with a CEMS. As written, it can be inferred that §95114(e)(1) applies to both CEMS and non-CEMS monitoring methods, and §95114(e)(2) is an "in addition to" rather than an "instead of" requirement.

Air Products strongly recommends ARB reconsider the requirements for this costly and low/no benefit feedstock sampling and characterization. We again recommend eliminating any sampling and analysis requirements imposed on pipeline natural gas feedstocks, and further recommends eliminating or reducing the sampling and characterization requirements for other gaseous feedstocks, except as otherwise needed to calculate the facility's GHG emissions.

4. ***Air Products <u>does not</u> support adding a requirement to report CO_2 and CH4 emissions from waste gases directed to hydrogen plant flare systems*** [§95114(g) and §95114(l)]

   This issue was considered under the 45-day amendments, with the ARB's decision to leave intact the requirement to quantify and report this minor emission source. Air Products strongly recommends ARB reconsider this reporting requirement. Air Products' hydrogen production facilities across the U.S. report emissions under 40CFR98 Subpart P. EPA's Subpart P recognizes that flare GHG emissions are negligible for hydrogen plants. Under 40CFR98.30(b)(4), emissions from flares are exempt from reporting unless otherwise required by provisions of another applicable Subpart (in this case, Subpart P). Subpart P does not require reporting GHG emissions from flares.

   Air Products asks ARB's to reconsider their rationale for imposing the additional administration, calculation, recordkeeping and reporting tasks (and costs) of such negligible emissions. In §95114(l) of the MRR regulation approved by the Board in October applies the flare emission calculations methodologies of §95113(d) (Petroleum Refineries), a method that is overly burdensome The §95113(d) requirements reference 40CFR98 Subpart Y methods – emission estimating methodologies and reporting requirements specifically tailored by US EPA to Petroleum Refining facilities in recognition that the facilities covered under that Subpart are likely to have flare emissions which are not de minimis… and thus appropriately should have a requirement for estimating and reporting. Applying these methods to the negligible emissions of hydrogen production units is disproportionate. This is further demonstrated by the fact that under the initial versions of California's MRR, when flare emission reporting was imposed, our hydrogen plants could routinely demonstrate that the emissions satisfied the de minimis reporting threshold. Air Products again recommends the requirements of §95114(g) and (l) be eliminated.

Air Products hopes that the above comments on the proposed MRR modifications illustrate our critical interest and support of CARB's efforts. If you have any questions or need additional information to support Air Products position on these matters, please contact me by phone (610-909-7313) or email (adamskb@airproducts.com).

Respectfully,

Keith Adams, P.E.

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Environmental Manager – Climate Change Programs

c: Eric Guter, Patrick Murphy, Peter Snyder, Stephen Crowley, Barry Beasley, Scot Govert, James Reebel, Keith Leinbach – Air Products
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