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EPA Docket Center
EPA West (Air Docket)
Attention Docket ID Number EPA-HQ-OAR-2011-0797
U.S. Environmental Protection Agency
Mailcode: 2822T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Sir/Madam:

On behalf of the National Association of Clean Air Agencies (NACAA), thank you for this opportunity to comment on the proposed National Emissions Standards for Hazardous Air Pollutants: Primary Aluminum Reduction Plants, which were published in the *Federal Register* on December 6, 2011 (76 *Federal Register* 76260). NACAA is a national, non-partisan, non-profit association of air pollution control agencies in 45 states, the District of Columbia, 4 territories and over 165 metropolitan areas. The air quality professionals in our member agencies have vast experience dedicated to improving air quality in the U.S. The comments we offer are based upon that experience. The views expressed in these comments do not necessarily represent the positions of every state and local air pollution control agency in the country.

Eight years after the establishment of the Maximum Achievable Control Technology (MACT) standard for a source category, EPA is required to assess the residual risk that remains from emissions from the source category, as well as examine whether advancements in control technology warrant additional requirements. NACAA supports EPA's decision to require additional emission reductions and monitoring requirements beyond the original MACT standard for the Primary Aluminum Reduction Plants source category. We offer the following comments about specific elements contained in the proposal.

Additional Requirements – Because of the adverse health effects associated with exposure to the substances emitted by Primary Aluminum Reduction Plants, NACAA is pleased that EPA recognizes the need for additional control requirements in this action.¹ For example, the agency evaluated and is proposing measures to address emissions of polycyclic organic matter (POM) from Soderberg potlines because they pose an unacceptable risk even after the imposition of the 1997

¹ 76 *Federal Register* 76266-76267 and 76274-76278.

Maximum Achievable Control Technology (MACT) standard or the amendments of 2005. Additionally, EPA is proposing standards for emissions of POM and carbonyl sulfide from certain types of emission points that were not regulated in the original MACT standard. We commend EPA for identifying these hazardous emissions and for proposing to regulate them at this point. However, we have significant concerns about deficiencies in the proposal, including some of the risk assessments upon which EPA bases its proposed decisions.

Allowable Emissions – NACAA recommends that EPA consider potential or allowable emissions, rather than actual emissions, as much as possible in evaluating residual risk. Since facility emissions could increase over time for a variety of reasons, and with them the associated impacts, the use of potential or allowable emissions is more appropriate. We believe an analysis based on actual emissions from a single point in time could underestimate the residual risk from a source category. Further, the major source hazardous air pollutant (HAP) thresholds are based on maximum potential-to-emit, as opposed to actual emissions, and air agencies issue permits based on potential emissions. Limiting the scope of a risk evaluation to actual emissions would be inconsistent with the applicability section of Part 63 rules. We were pleased to see that EPA used allowable emissions in parts of the rulemaking but were concerned about the fact that EPA continues to use actual emissions in other parts of its assessment.² NACAA encourages the agency to use allowable emissions in the future, including in assessing acute health risks.

Property-line Concentrations – In assessing the cancer risks related to the source category, EPA used long-term concentrations affecting the most highly exposed census block for each facility.³ This analysis dilutes the effect of sources' emissions by estimating the impact at the centroid of the census block instead of at the property line or wherever the maximum exposed individual is. Census blocks can be large geographically, depending on the population density, so the maximum point of impact can be far from the centroid, including at or near the property line where people may live or work. EPA itself alludes to this problem in the preamble to the proposed rule.⁴ Further, even if the area near the property line is not developed, over time homes and businesses could locate closer to the facility. While it is possible that population distribution is homogenous over a census block, this assumption is not necessarily accurate in considering the predicted impacts from the location of a source. Using HEM-3, EPA can identify the maximum individual risk at any point in a census block that is within a 50-kilometer radius from the center of the modeled facility. Based on HEM-3's power and ability, NACAA suggests that EPA abandon its use of the predicted chronic exposures at the census block centroid as surrogates for the exposure concentrations for all people living in that block. Rather, we recommend that EPA use the truly maximum individual risk, irrespective of its location in the census block, in its section 112(f)(2) risk assessments.

Multi-pathway Risks – NACAA is disappointed that EPA did not proceed with the required multi-pathway risk assessment after the data showed that the persistent and bioaccumulation (PB) screening emission rates were exceeded for POM. The proposal states:

² 76 *Federal Register* 76267.

³ 76 *Federal Register* 76268.

⁴ 76 *Federal Register* 76271.

[T]o screen for potential multi-pathway effects from emissions of POM, we compared the estimated actual PAH [*polycyclic aromatic hydrocarbons*] emission rates from 14 facilities in this source category to the multi-pathway screening rate for PAHs described in section III.B. Results of this worst-case screen estimate that actual PAH emissions from all 14 facilities exceed the PAH multi-pathway screening rate. With respect to these exceedances of the worst-case multi-pathway screening rate for PAHs, we note that this only indicates the potential for multi-pathway-related cancer risks of concern from PAHs. Moreover, due to data limitations, we were not able to refine our multi-pathway analysis beyond the screening assessment. Thus, we note that these results are biased high for purposes of screening and are subject to significant uncertainties. As such, they do not necessarily indicate that multi-pathway risks from POM are significant, only that we cannot rule out the possibility that they might be significant.⁵

In the Residual Risk document referenced in the quote, EPA outlines the steps for a detailed multi-pathway risk assessment but does not actually conduct the assessment. The screening results indicate that a complete multi-pathway risk assessment should have been conducted for those facilities exceeding the mass emission screening benchmark. We do not believe the risk analysis for this source category is final until this step is complete.

Fluoride Deposition – The emissions of particulate fluoride from the 14 primary aluminum reduction facilities ranges from 50 to 250 tons per year and was not accounted for in the Residual Risk and Technology Review (RTR) analysis because fluoride itself is not a HAP. However, fluorosis in grazing ruminants has been shown to occur with continuing low level fluoride ingestion.^{6,7,8} The current body of scientific evidence about the occurrence of fluorosis in grazing livestock is clear: it is the direct result of livestock grazing (ingestion) on fluoride-contaminated forage. Also, excessive atmospheric fluoride concentration has been associated, in varying degrees, with vegetation damage. The chronic inhalation analysis for potential human ingestion shows a maximum hazard quotient of 0.4 for hydrogen fluoride (HF), but does not address the concern of fluoride deposition from gaseous emissions.⁹ A review of aerial photography shows that most of the Primary Aluminum Production Plants have active farm land surrounding the identified facilities and the potential for animal grazing should be a concern.¹⁰ The RTR fails to recognize this welfare effect and the important exposure pathway of ingestion needs to be accounted for in addition to direct inhalation exposure for all mammals.

⁵ 76 *Federal Register* 76277.

⁶ Cornell Vet. 1980 Apr;70(2):183-92. New York State and U.S. Federal fluoride Pollution Standards Do Not Protect Cattle Health. Crissman JW, Maylin GA, Krook L.

⁷ Cornell Vet. 1979 Apr;69 Suppl 8:suppl 1-70. Industrial Fluoride Pollution. Chronic Fluoride Poisoning in Cornwall Island Cattle. Krook L, Maylin GA.

⁸ Cornell Vet. 1987 Jan;77(1):84-98. Fluoride Intoxication in Dairy Calves. Maylin GA, Eckerlin RH, Krook L.

⁹ Appendix 6, Acute Impacts Refined Analysis Figures, of the Residual Risk Assessment for the Primary Aluminum Production Source Category, OAQPS, November 11, 2011, Baseline Risk Characterization,, p. 21-22.

¹⁰ Appendix 6, Acute Impacts Refined Analysis Figures, of the Residual Risk Assessment for the Primary Aluminum Production Source Category, OAQPS, November 11, 2011.

Environmental Justice – We commend EPA for considering environmental justice issues by expressing concern about the disproportionate impacts of HAP emissions on certain social, demographic and economic groups.¹¹ However, we believe improvements are needed in EPA's methods of evaluating environmental justice and encourage EPA to continue to consider these factors in developing the final rule and subsequent regulations.

NACAA recommends that EPA conduct the demographic analysis on individuals projected to experience a risk greater than 1-in-1-million and *also* on individuals living within five kilometers of the facility, regardless of projected risk, consistent with the approach used for the Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks source category.¹² The socio-economic analysis for this rule did not evaluate potential disparities within five kilometers for cancer risk at maximum allowable emission levels. This type of analysis is especially important in instances where a facility is located in a minority and low-income community. Unfortunately, in the proposal, EPA *only* evaluated the risk to the population within a 50-kilometer radius, which could dilute the results by including populations not in the demographic groups most at risk. This is especially the case if the source is located in or next to a minority or low-income population. Therefore, we recommend an analysis at the five-kilometer distance be conducted to assess facility impacts to nearby environmental justice communities. NACAA also recommends that the rule writers work with the EPA Office of Environmental Justice to develop criteria and specific guidance on how to interpret and apply the outcome of these types of analyses in the rulemaking process.

Additionally, poverty statistics used to identify low-income communities should be updated to include 2010 census data, rather than relying on older information. The number of people in poverty in 2010 is the largest number in the 52 years for which poverty estimates have been published.¹³

Acute Exposure – We have expressed our concerns in the past with EPA's use of Acute Exposure Guideline Levels (AEGs) or Emergency Response Planning Guidelines (ERPGs) values to address acute exposures in the residual risk assessments. These limits were developed for accident release emergency planning and are not appropriate for assessing daily human exposure scenarios. In the December 2002 EPA document, "A Review of the Reference Dose and Reference Concentration Processes," EPA stated that the primary purpose of the AEGs program is to develop guidelines for once-in-a-lifetime short-term exposures to airborne concentrations of acutely toxic chemicals. They are not meant to evaluate the acute impacts from routine emissions that occur over the life of a facility. Unlike the reference concentrations (RfCs) for chronic exposures, the AEGs and ERPGs do not include adequate safety and uncertainty factors and cannot be relied upon to protect the public from the adverse effects of exposure to toxic air pollutants. The use of AEGs or ERPGs in residual risk assessments is not appropriate and does not ensure that public health is adequately protected from the acute impacts of HAP exposure. We are gratified to see that EPA has increased its reliance on the California

¹¹ 76 *Federal Register* 76285.

¹² 75 *Federal Register* 65089.

¹³ US Census 2011. *Income, Poverty, and Health Insurance Coverage in the United States: 2010*. Available at <http://www.census.gov/prod/2011pubs/p60-239.pdf>.

Reference Exposure Levels (RELs) to address acute exposures in the residual risk assessments¹⁴ and we continue to urge EPA to use the RELs for these assessments.

Thank you for this opportunity to comment on the proposal. Please contact us if we can provide additional information.

Sincerely,



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¹⁴ 76 *Federal Register* 76269.