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To Docket Clerk:

Enclosed please find the comments of the Utility Air Regulatory Group ("UARG") on the draft North American Regional Action Plan on Mercury, Phase II (64 Fed. Reg. 50,284, Sept. 16, 1999), Docket Control Number OPPTS-00276.

If you have any questions about these comments, please contact me at 202/955-1535.

Sincerely,

Lee B. Zeugin
Lee B. Zeugin

**UNITED STATES OF AMERICA
ENVIRONMENTAL PROTECTION AGENCY**

North American Regional Action Plan on Mercury))))	Docket No.: OPPTS-00276
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**Comments of the Utility Air Regulatory Group on
Draft North American Regional Action Plan on Mercury, Phase II
(64 Fed. Reg. 50,284, Sep. 16, 1999)**

On September 16, 1999, the Environmental Protection Agency ("EPA") published a notice of availability of phase two of a draft North American Regional Action Plan on Mercury ("NARAP" or "Plan").¹ EPA, acting as the representative of the United States, developed the NARAP in conjunction with representatives from the governments of Canada and Mexico.² In doing so, these representatives acted pursuant to the authority set forth in the North American Agreement on Environmental Cooperation ("NAAEC") entered into by the United States, Canada and Mexico (collectively, the "Member States") in 1994.³ The draft NARAP recommends specific goals and targets for the reduction of anthropogenic mercury emissions in North America. In its notice, EPA invited public comment on the NARAP as part of an ongoing effort to refine these recommendations.⁴ The following comments are submitted by the Utility Air Regulatory Group ("UARG"),⁵ and highlight areas of particular concern to UARG.

¹ See 64 Fed. Reg. 50,284 (1999).

² North American Regional Action Plan on Mercury, Phase II, Aug. 17, 1999, North American Implementation Task Force on Mercury.

³ North American Agreement on Environmental Cooperation, Jan. 1, 1994, U.S.-Can.-Mex.

⁴ See 64 Fed. Reg. at 50,284.

⁵ UARG is an association of sixty-two individual electric utilities and three national electric utility trade associations (the American Public Power Association, the Edison Electric Institute, and the National Rural Electric Cooperative Association). UARG's purpose is to participate collectively

I. The Clean Air Act, And Not the NARAP, Governs Any EPA Regulatory Action on Mercury

The NAAEC is an "overarching framework for environmental cooperation" intended to "facilitate cooperation" among Member States "on the conservation, protection and enhancement of the environment in their territories."⁶ However, the NAAEC explicitly subordinates itself to "the right of each [Member State] to establish its own levels of domestic environmental protection."⁷ In accordance with this recognition of the primacy of the domestic environmental laws and regulations of each Member State, the NAAEC is empowered only to make "recommendations" for action as to specific pollutants, leaving the environmental agencies of the Member States to decide whether and what regulatory action might be appropriate to address such goals.⁸ The targets and goals for mercury set forth in the NARAP are one such recommendation.

In the United States, any EPA action with respect to air emissions from fossil fuel-fired utilities is governed by the Clean Air Act ("CAA" or "Act"). The Clean Air Act specifically commands EPA to investigate and determine the hazards to public health, if any, posed by hazardous air pollutant emissions from electric utilities after the other provisions of the CAA have been implemented, and to make an official determination as to whether regulation is "necessary and appropriate."⁹ EPA must take these steps *before* making any regulatory decision on mercury emissions from "steam electric generating units." EPA has not yet made these determinations. In the Mercury Study published in 1997 and the Utility Study published in early 1998, EPA did not

on behalf of its members to advance their interests in rulemakings and other administrative proceedings, and in litigation arising from those proceedings.

⁶ NARAP at 2.

⁷ NAAEC at art. 3.

⁸ NAAEC at art. 2, 10(2), 10(5)(b).

reach any final regulatory decisions. Instead, EPA identified scientific uncertainties in more than forty areas.¹⁰ These include: (1) the level of human exposures in the United States from anthropogenic mercury emissions, (2) human health effects from mercury exposure, including pharmacokinetics and health endpoints, (3) the contribution of natural and anthropogenic sources of mercury emissions to the global pool of mercury, and (4) the fate and transport of mercury in the atmosphere and waterbodies, including bioaccumulation in aquatic biota.¹¹

EPA has stated that it plans to address these uncertainties, and hopes to reach a final determination on the health risks posed by mercury emissions, and the need for regulation of such emissions, by December of 2000. The National Academy of Science's pending review of EPA's reference dose for mercury exposure, currently expected in June 2000, will be an important component in EPA's decision. Until EPA addresses these scientific uncertainties and makes the findings required by the Utility Study, any action to reduce U.S. mercury emissions from steam electric generating units is premature. In short, the policy recommendations in the NARAP do not absolve EPA of its duty to address mercury emissions according to the jurisdiction provided it by the CAA.

Furthermore, the NARAP's recommendations are themselves internally inconsistent, advocating the "virtual elimination" of mercury emissions while emphasizing that additional research is needed in order to understand the sources, fate, transport, exposure, and ultimate human health effects associated with mercury emissions in the Member States.¹² Unsurprisingly,

⁹ See CAA § 112(n)(1)(A); see also CAA § 112(n)(1)(B).

¹⁰ See, e.g., Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units – Final Report to Congress, EPA-453/R-98-004a (EPA 1998) ("Utility Study"), vol. 1, at ES-18; Mercury Study Report to Congress, EPA 452/R-97-003 (EPA 1997) ("Mercury Study"), vol. 1, at 5-1 through 5-7.

¹¹ See id.

¹² See NARAP at 13-16.

the areas of scientific uncertainty identified in the NARAP are substantially the same areas that precluded EPA from reaching a determination on the health risks associated with mercury emissions in the Utility Study.¹³ In particular, the NARAP notes uncertainties associated with the health effects of mercury exposure, including the proper threshold effect level or reference dose for mercury, as well as the actual level of mercury to which humans are exposed, a problem compounded by the lack of measured hair and blood mercury values.¹⁴

The NARAP observes the principle that: "[w]here there are *threats of serious or irreversible damage*, lack of full scientific evidence shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."¹⁵ Here again, however, the NARAP's emphasis on immediate action to reduce or eliminate mercury emissions assumes that an identifiable threat of "serious" or "irreversible" damage to human health or the environment exists. As discussed above, neither EPA's efforts nor the NARAP itself supports this assumption. EPA specifically declined to reach this conclusion in the Utility Study, stating that: "The EPA recognizes that there are substantial uncertainties that make it difficult to quantify the magnitude of the risks due to utility emissions, and that further research and/or evaluation would be needed to reduce these uncertainties."¹⁶ Similarly, the emphasis in the NARAP on the need for additional scientific research on the relationships between mercury emissions, exposure and human health effects makes it clear that the threat to public health posed by anthropogenic mercury emissions remains undetermined. The broad statement in the NARAP that "anthropogenic releases of mercury to North American and global environmental media pose risks to human health and the

¹³ Cf. Utility Study, vol. 1, at ES-18.

¹⁴ See NARAP at 13.

¹⁵ Id. at 7 (emphasis supplied).

¹⁶ Utility Study, vol. 1, at ES-18.

environment," is unenlightening without some definition of the level of risk posed, the nature of that risk, or its significance.¹⁷ The NARAP simply does not constitute evidence of a need for regulation of mercury emissions from fossil fuel-fired power plants, and does not in any way relieve EPA from making the requisite factual findings under the Clean Air Act.

II. The "Virtual Elimination" of Mercury is Unattainable

The NARAP advocates as its primary goal the "virtual elimination" of mercury emissions from anthropogenic sources, which the Plan defines as the reduction of ambient mercury to "naturally-occurring levels and fluxes of mercury in environmental media."¹⁸ This goal is unattainable, for a number of reasons.

As an initial matter, the amount of mercury reduction called for by this "virtual elimination" goal cannot meaningfully be determined, because it is not yet known how much of the mercury in the atmosphere and in waterbodies originates from natural sources, or how much of the fluctuation in ambient mercury levels may be attributed to natural causes.

More importantly, as the NARAP recognizes, atmospheric mercury emissions travel significant distances and do not respect national boundaries. The overwhelming majority of anthropogenic mercury emissions originate outside of the United States.¹⁹ EPA estimates indicate that total anthropogenic mercury emissions from U.S. sources comprise approximately 3% of total anthropogenic mercury emissions worldwide.²⁰ Even the total elimination of U.S. anthropogenic mercury emissions would have little effect on the amount of mercury present in the atmosphere and waterbodies in North America. Furthermore, the factors that govern the cycling

¹⁷ NARAP at 7.

¹⁸ Id.

¹⁹ See id. at 3.

²⁰ Utility Study, vol. 1, at ES-17.

of mercury from the atmosphere into waterbodies, and ultimately into fish and other aquatic biota, remain uncertain.²¹ Preliminary data and models for these relationships have led some scientists to hypothesize that the total elimination of U.S. mercury emissions in the United States would not lead to appreciable reductions of environmental mercury for decades.²²

Finally, even if it were somehow established that the total elimination of U.S. emissions of mercury would result in the reduction of environmental mercury to levels consistent with natural sources, EPA has recognized repeatedly that such reductions are presently technologically and commercially infeasible for steam electric generating units. Specifically, EPA's Mercury Study assumes a maximum mercury control rate from coal-fired power plants of 90%, and makes clear that achieving even this level of control is problematic because of high variability in the performance of mercury controls among individual facilities.²³ Indeed, in a more recent study of emissions control options for coal-fired power plants, EPA assumed that only about 7% of coal-fired generating facilities would achieve reductions of 90%, with the overwhelming majority of facilities achieving, at best, reductions of 65% to 85%.²⁴ Moreover, these reductions are attributed to a control technology that has never been tested in a full-scale power plant.²⁵ In

²¹ See Utility Study, vol. 1, at ES-15, ES-18 & ES-19; An SAB Report: Review of the EPA Draft Mercury Study Report to Congress, EPA-SAB-EC-98-001, October 1997 ("SAB Report"), at 18, 30-31.

²² See *id.* at ES-15.

²³ See, e.g., Mercury Study, vol. 8, at ES-12 (EPA notes that identical mercury control technology employed at two different facilities might result in respective mercury capture rates of 20% and 80%).

²⁴ See EPA, Office of Air and Radiation, Analysis of Emissions Reduction Options for the Electric Power Industry App. C-4 (1999) ("Control Options Report").

²⁵ See generally *id.* at App. C; see also Utility Study, vol. 1, at ES-19 ("Regarding potential methods for reducing mercury emissions, the EPA has not identified any demonstrated add-on control technologies currently in use in the U.S. that effectively remove mercury from utility emissions.").

addition to the currently insurmountable technical problems associated with achieving the total elimination of mercury emissions, any regulation of mercury emissions must take into account the cost-effectiveness and cost-feasibility of controls.²⁶ In this regard, EPA's estimate in the Mercury Study that the imposition of retrofit controls necessary to achieve 90% reductions of mercury (assuming such reductions are possible) would cost the electric utility industry over \$5 billion annually -- a \$67,000-70,000 cost per pound of mercury removed -- must weigh heavily in any consideration of the feasibility of eliminating mercury emissions from such units.²⁷

In sum, the NAAEC's goal of reducing North American environmental mercury to levels consistent with naturally occurring mercury emissions is currently impossible, and setting such unachievable goals does not coincide with effective, cost-efficient regulation.

III. The Need for the Reduction of Anthropogenic Mercury Emissions to Naturally Occurring Levels Has Not Been Demonstrated

Any restriction on anthropogenic mercury emissions must be based on a quantifiable threat to human health associated with these emissions. Even if it were possible to reduce North American environmental mercury to naturally occurring levels, neither the CEC nor EPA have demonstrated that such a reduction is needed. In particular, both the NARAP and EPA's Utility and Mercury Studies repeatedly cite the fragmentary and conflicting nature of knowledge about the levels of mercury exposure at which health effects begin, the nature of such health effects, and the relationship between anthropogenic emissions and mercury exposures in humans. Indeed,

²⁶ See NARAP at 6 (defining "best practices").

²⁷ See Mercury Study, vol. 8, at ES-14 (table). On a related issue, although UARG agrees that cost-effective means to reduce multiple pollutants with a single control technology are to be preferred, we note that the NARAP's stated goal, that "recommended control technologies for mercury also promote significant reductions of a range of other pollutants, such as organics, acid gases and particulates," may prove problematic. In its most recent investigation of multi-pollutant controls, EPA stated that: "[maximum achievable control technologies for mercury] like the

recent work on mercury health effects in the Seychelles Islands has shown no effect from chronic exposures to mercury via fish consumption at dose levels significantly higher than those associated with U.S. fish consumption.²⁸ Further quantification of the above relationships is needed, therefore, in order to determine what levels of exposure to environmental mercury are safe, and what restrictions on anthropogenic mercury emissions, if any, are needed to protect human health and the environment.

Conclusion

For the reasons stated above, UARG believes that the NARAP's goal of the "virtual elimination" of anthropogenic mercury emissions in North America is inappropriate and premature, and that the policy recommendations set forth in the NARAP do not excuse EPA from completing its obligations under the CAA.

hypothetical ones used in [its emissions control options] study are likely to have little effect on SO₂, NO_x, and/or carbon emissions." Control Options Report at 4-2.

²⁸ See, e.g., Davidson et al., Effects of Prenatal and Postnatal Methylmercury Exposure from Fish Consumption on Neurodevelopment, Outcomes at 66 Months of Age in the Seychelles Child Development Study, 280 JAMA 701-07 (1998); Davidson et al., Longitudinal Neurodevelopmental Study of Seychellois Children Following In Utero Exposure to Methylmercury from Maternal Fish Ingestion: Outcomes at 19 and 29 Months, 16 Neurotoxicology 677-688 (1995).