

June 19, 2001

MEMORANDUM

To: William Maxwell, EPA/OAQPS/ESD/CG

From: Jeffrey Cole, RTI

Subject: Updated Draft Interim Report on Data Analyses

PURPOSE

The purpose of this memorandum is to discuss changes to RTI's data analyses data that were made after my 9/15/00 memorandum to you entitled, "Draft Interim Report on Data Analyses." In February-March 2001, EPA conducted a thorough quality assurance/quality-control (QA/QC) review of the data extracted from the Hg emissions stack test reports. Changes to the national Hg emissions total as a result of updated data and the initial presentation of the estimated speciated Hg split are presented in this memorandum.

BACKGROUND

Since the "Draft Interim Report on Data Analyses" was written, several changes have been made. RTI found three of four units that had reported their type of fuel burned incorrectly. Five or six plants had incorrect Department of Energy's, Energy Information Administration (DOE/EIA) Office of the Regulatory Information System (ORIS) codes. These and other minor changes were made to the unit configuration, fuel usage, and mercury (Hg)/chlorine (Cl) analyses databases. The Brayton Point facility, was mis-located in the previous configuration output file. It was listed as being in Maryland, when it's actual location is Massachusetts.

In February 2001, RTI began a thorough review of the data extracted from the 80 Electric Utility/Information Collection Effort (EU/ICE) speciated mercury emissions stack test reports. RTI developed and implemented a QA/QC study of the reports to determine the quality of the original data extraction and to correct any errors. As part of this effort, RTI developed a sophisticated spreadsheet

data entry form that allowed all test reports to be analyzed in a uniform manner using a single standard QC method.

RTI found several types of errors in data extracted from different test reports. Occasionally the data errors were a result of incorrectly transferring data to EPA's national utility mercury model or in misreporting the fuel a specific unit burned. However, more data errors occurred when the testing contractor or the report writing contractor incorrectly reported details about the testing and process data. RTI reviewed the original Ontario Hydro Method data sheets, in each test report, and examined each data point to determine its validity. RTI had to call several plant representatives either to confirm items reported or to extract crucial data that was not included in the test report.

The individual data corrections inside a test report had some effect on the average EMF for that test. However the more significant change occurred when a tested plant's fuel type was incorrectly reported. This error could cause the test data to reside in a different database segment (bin) than originally modeled. Once these errors were found and corrected RTI proceeded with updating the Electric Utility National Mercury Emissions Model with the newly quality-controlled data from the emissions test reports.

RESULTS

Because of this further QA/QC examination of data extracted from the Hg emissions stack test reports, the estimated national total of mercury emitted from all coal-fired electric utility steam-generating units in 1999 is now approximately 48 tons. This amount of mercury was emitted from 1,143 units at 461 facilities. This total is composed of 1.48 tons/yr of particle-bound mercury (Hg^p), 20.41 tons/yr of oxidized mercury(Hg^{2+}), and 26.10 tons/yr of elemental mercury (Hg^0).