

# **CEA MERCURY PROGRAM – SAMPLING & ANALYSIS IMPLEMENTATION PLAN**

## **SECTION 3**

### **STACK SAMPLING GUIDELINE**

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### INTRODUCTION

Mercury emissions from coal-fired boilers have been notoriously difficult to quantify, given the complex chemistry of mercury and the limitations of methodologies at the low concentrations at which mercury exists in typical combustion flue gases. In support of the development of the Canada Wide Standard for Mercury, the Canadian electricity generators are upgrading their estimates of mercury emissions from their boilers. This quality-assured speciated emissions inventory will provide the basis for work among industry, governments, and other stakeholders to improve the management of mercury emissions from coal-fired boilers.

As part of a voluntary mercury program, several Canadian Electricity Association (CEA) members will conduct standardised stack tests, after the pollution control device(s) on a unit at a facility, over the period of 2002 – 2003.

### PROGRAM DESCRIPTION

#### *General*

The guideline for stack testing provides flexibility for companies with respect to individual differences. Previously conducted tests and similarities among coal, combustion and emission control devices are key factors in determining the need for testing. For instance:

- Stack analyses conducted since 1996 using the Ontario Hydro Method and meeting the criteria for quality assurance and quality control will not require retesting.
- It is not necessary to carry out stack sampling and analysis for each unit. It is recognised that many utilities have boiler configurations and feed coal sources that are equivalent for the purposes of mass balance. In such a case the data from one unit may be used as a proxy for another.

Company requirements for activity will be established on a site-by-site basis with provincial regulators. A stack test plan will be devised and provided to each jurisdiction pending this decision.

#### *Stack Testing*

Testing should be conducted in accordance with either the “Standard Test Method for Elemental, Oxidised, Particle-bound, and Total Mercury in Flue Gas Generated from Coal-fired Stationary Sources (Ontario Hydro Method)”, or USEPA Method 29 as appropriate. The Ontario Hydro Method will be employed where speciated mercury emissions are required and Method 29 where total mercury emission data is sought.

Stack testing will be conducted after the last pollution control device. Testing is to consist of three runs at full load. During each stack test, three as-fired coal samples, and three combustion residue samples will also be collected and analysed. The results of the analysis of stack tests, coal samples and residue samples will be reported when final, in a manner consistent with the Reporting Guideline outlined in Section 4.

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### ***Schedule/Deliverables***

The Stack Testing Program is estimated to require 24 months to complete. Utilities will be expected to submit the results of stack testing to their respective jurisdictions in a manner consistent with Section 4 Reporting Guideline. Reports will include data for mercury in coal, mercury in combustion residues and mercury air emissions. All stack testing should be completed by June 2004.

### ***Qualifications***

The qualified Company/Contractor must have demonstrated experience with the Ontario Hydro Method or USEPA Method 29 as appropriate.