Developing a mass balance around an electrical generating plant burning Nova Scotia coal

J.J.G. Lajeunesse
Advanced Technologies Group, Nova Scotia Power Inc., Halifax, Nova Scotia, Canada

Increasing concern over the potential negative effects of priority substances, has led some governments to introduce legislation design to control their emissions. This emphasis has been the motivator for coal burning electric utilities to undertake programs to investigate the emissions coming from their power plants.

While priority substances quantification and control studies have been reported in the literature, much of the early work is disjointed and lacks focus and is therefore of limited value in drawing generalized conclusions about specific coals and combustion processes. Adding to the difficulties are the coal and process specific nature of the studies and the lack of standardized sampling, analytical and data reporting protocols.

In 1993, Nova Scotia Power, as part of a Canadian Electrical Association (CEA) Advisory Panel, carried out comprehensive emissions tests at its Lingan coal fired generating station. The study followed product streams from the mine, through the wash plant and furnace to the ultimate disposition as bottom ash, fly ash and stack gas. During the program, the sampling and analytical protocols recommended by the CEA Advisory Panel were evaluated. This paper describes the study, comments on the applicability of protocols and presents some of the data.