Q. For the budget item identified below, provide the following information:

Budget Item	***Amount***	***Description***
B-19	$801,000	Purchase and Install Continuous Emission Monitoring

(a) The health risk assessment report provided in response to NP-104 (c) does not recommend in-stack measurement as has been proposed by Hydro, but recommends ambient air monitoring stations. Explain how this report provides a rationale for installing in-stack monitoring?

(b) What sox/nox ratio was used in the report? What is a reasonable range of sox/nox ratios that might be experienced? What sox/nox ratio would be expected to cause a problem?

A. (a) The health risk assessment report recommends the use of ambient air monitoring equipment to assess the validity of the SO_2/NO_2 ratio used in the report. This equipment is expensive to install and operate and could be used for this purpose only. Hydro has proposed in-stack monitoring equipment because it could also be used to assist staff in operating the plant more efficiently while reducing emissions. Ambient monitoring equipment cannot perform this dual function for the following reasons:

- Ambient monitoring equipment would be located at a significant distance from the plant and therefore the measured emissions would lag the real time plant conditions while in stack monitoring equipment provides real time data.

- Ambient monitoring equipment would be installed at several discrete sites. On days when the wind diverts the stack plume in a direction away from the monitoring sites, data recorded would not represent the actual emission.

- Ambient monitoring equipment and monitoring sites would be remote from the generating plant and are therefore more expensive to operate and maintain.

(b) The SOx/NOx ratio used was 15.576. The normal operating ratio is dependent on the fuel and operating conditions. The range of SOx/NOx ratio depends upon the boiler combustion conditions and chemical composition of the fuel for a given time and hence it is difficult to predict. The level that would be expected to cause a problem from a regulatory standpoint is 2.571. This is based on the provincial air pollution regulations, which state that the permitted hourly SOx emission rate is 900 ppb/hr and the permitted hourly NOx emission rate is 350 ppb/hr.