Q. On page 3 of NLH's covering letter, it is implied that the use of fuel with a lower sulphur content will cause sulphur dioxide levels to be reduced by 50%, total particulate emissions to be reduced by 40 to 60 percent, and opacity levels to be significantly reduced. The SGE Acres Limited report, p. 4-6, section 4.2.3.1, however, states that "With no change to the current particle size distribution profile, the use of a lower sulphur content fuel could achieve the objective of 20 percent reduction in PM_{10} emissions." Provide detailed documentation setting out the anticipated impact of the switch from 2% to 1% sulphur?

A. Particulate emissions are generally sub-classified by the size of the particles. The smaller size particles (those of less than 10 micrometers in diameter) comprise those particles referred to as coarse particulates, PM_{10}, and fine particulates, $PM_{2.5}$. These are subsets of total particulate emissions. Particles larger in size than 10 micrometers have a greater effect on opacity levels than smaller particles.

The SGE Acres Limited report, p. 4-6, section 4.2.3.1, states that reducing the sulphur content of fuel as proposed for the HTGS is anticipated to reduce overall particulate emissions by 40 to 60 percent. That report also states that a reduction in $PM_{2.5}$ emissions in the range of 30 percent can be expected. Hydro targeted a reduction in PM_{10} particulates by 20 percent, which the SGE Acres Limited Report states can be achieved through a reduction in the sulphur content of the fuel to 1% sulphur.