



MEMORANDUM

TO: Bryan Tuckey, Commissioner, Planning and Development Services

FROM: Dr. Karim Kurji, Medical Officer of Health

DATE: October 3, 2008

RE: **Public Health Impacts of Emissions from Natural Gas Fired Peaker Plant**

I am writing in response to a recommendation approved by York Region Council on September 18, 2008 that the 'Medical Officer of Health be requested to report on the health and environmental risks relating to air emissions from electric power generation', regarding the proposed sites for private electric power generation in York Region.

According to Natural Resources Canada, natural gas burns more cleanly than either coal, gasoline or diesel fuel. The Energy Information Administration under the United States Department of Energy states that natural gas, when burned, emits lower quantities of greenhouse gases and criteria pollutants per unit of energy produced than do other fossil fuels.

Environment Canada indicates that where natural gas is of particular concern is in its contribution to climate change, citing that methane, carbon dioxide and water vapour are all important greenhouse gases. The pollutants emitted by natural gas peaker plants are the same pollutants that would occur from burning of any natural gas such as home heating, which Environment Canada lists as primarily nitrogen oxides, which play a key role in the formation of smog. In addition, particulate matter, sulphur oxides and reactive hydrocarbons are also produced from the burning of natural gas, but in very small amounts compared to the combustion of other fossil fuels.

Although there is limited research which examines the health effects of living near a natural gas power plant, local assessment from nearby natural gas power plants in both Peel and Halton Regions can be examined for comparison. Both Regions' plants are combined cycle plants, as opposed to the proposed single cycle plant for York Region. According to the overall summary of Halton Region's *Human Health and Ecological Effects Assessment for the Halton Hills Generating Station*, there would be no measurable adverse effects, from short- or long-term exposure, on humans as a result of air emissions from the generating station.

It is important to note that assessing the public health impacts of air emissions from any source requires facility-specific, detailed information about the technology being proposed, the contaminants of concern and the location of the source of air emissions. For example, when the design team assessed the human health and ecological effects assessments for the proposed Halton Hills Generating Station, they also found carbon monoxide and polycyclic aromatic hydrocarbons as contaminants of concern.

Since the Ontario Power Authority is in the process of reviewing the industry submissions for the proposed single cycle natural gas plant for Northern York Region, specifics on the plant (e.g. technology and contaminants of concern) and location have not been finalized. As the peaker plant technology and location are the most important factors affecting the level of health impacts, it will be pertinent to determine impacts after a site has been chosen and details provided. Therefore, a human health and environmental risk assessment, similar to the study that was conducted in Halton Region would provide further information about public health and environmental impacts of emissions from the proposed natural gas plant. This assessment should include health impacts on the days when general poor air quality is experienced (e.g. smog alert days) as these are potentially the days when the plant will be operating and when air quality may already be poor.

To conclude, it is recommended that the proponent for the Natural Gas Fired Peaker Plant in York Region conduct a human health and environmental risk assessment, in accordance with accepted practices in the professional field of risk assessment that is provided for public review and comment.

Please do not hesitate to call me if you have any questions.

Thank you.

Copy to: Joann Simmons, Commissioner, Community and Health Services