

November 23, 2007

AMEC Reference: TC51603

The Barbados Light and Power Company Limited
Garrison Hill,
St Michael
Barbados

Attention: Mr. Roger Blackman

Dear Mr. Blackman:

RE: Environmental Impact Assessment – Effects of Installing a 20MW Simple Cycle Combustion Turbine at Trents Generating Station

We are pleased to respond to your enquiry regarding the effects of including a 20MW simple cycle combustion turbine operating on distillate fuel at the proposed Trents Generating Station on the conclusions of AMEC's Environmental Impact Assessment Report dated February 2006.

The Environmental Impact Assessment Report (February 2006) considered developing up to 240MW of generation over a series of stages by means of two options:

- Low speed diesels operating on heavy fuel oil; and
- Combined cycle combustion turbines operating on natural gas or distillate fuels.

The report assessed the effects of fully developing the site using either low speed diesels or combine cycle generation. This was a conservative approach, as development using a combination of these types of generation will have effects on air quality that are between the two extremes.

For an initial development consisting of a 20MW simple cycle combustion turbine operating on distillate fuel, the only change in effects that needs to be confirmed will be from the emissions. The former EIA report covered all of the other environmental aspects of site infrastructure.

We have completed modelling using AERMOD a Gaussian dispersion model supported by the US Environmental Protection Agency. The model uses real meteorological data and takes into account the effects of buildings and elevated terrain in the vicinity of the source.

The model calculated the dispersion of sulphur dioxide (SO₂), nitrogen oxides (NO_x) and particulate matter (PM and PM-10) emissions, so as to determine the maximum concentrations off site. The results of the modelling are as follows:

Dispersion Modelling Summary

Contaminant	Total Emission Rate (g/s)	Dispersion Model Used	Maximum Ground Level Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period (hours)	EU Criteria ($\mu\text{g}/\text{m}^3$)	Percentage of Criteria (%)
NO _x	7.58	AERMOD	85.8	1	200	43
			10.4	24	-	
			0.43	Annual	40	1.1
SO ₂	5.18	AERMOD	58.7	1	350	16.8
			7.09	24	125	5.7
			0.3	Annual	-	-
CO	0.081	AERMOD	0.33	8	10000	0.003
			0.11	24	-	-
			0.01	Annual	-	-
PM	0.11	AERMOD	1.2	1	-	
			0.15	24	50	0.3
			0.01	Annual	40	0.03

The results indicate that the plant will readily meet EU standards for effects on air quality. The NO_x emissions are considered conservative as they are based on use of a standard turbine with a 7 metre stack. These can be further reduced by selecting a turbine with improved NO_x controls.

All other effects considered within the Environmental Impact Assessment Report (February 2006) and conclusions made regarding their significance remain unchanged.

If you have any questions or need additional information please call me.

Yours very truly,
AMEC Earth & Environmental,
 a division of AMEC Americas Limited



Peter Rostern, M.B.A., P.Eng.
 Principal Environmental Engineer