Middletown Cogeneration Facility Emission Calculations

Emission Point:	**P001**
Operating Scenario	**MWERF1-MSS-3**
Description:	**Gas Turbine/HRSG SCR Maintenance Emissions**

Physical Characteristics:	Height of Stack above grade =	125	ft	
	Diameter of Stack =	16.5	ft	
Inputs shaded in Green	Stack Gas Exit Temperature =	317	F	
	Frequency	2	Events per year	
	Duration of Event	4	hours	
	Total annual operating hours =	8	hrs/yr	
Emission data:	Exhaust Molar Rate (dry) =	124,332	lbmole/hr dry @15%	From Normal GT Operation
	Net NOx Emission Factor =	25	ppmvd@15%O2	Net NOx Increase - 25 ppm from GT without any removal at the SCR

NOx Emissions:

Average Concentration (PPMV) **X** Molar Flow Rate (lbmole/hr) **X** Operating Hours X Molecular Weight (lbs/lbmole) / 2,000 lbs/ton X 1,000,000 **=** Tons/Year

NOx (tpy) =	25	ppmv	avg	**X**	124,332	lbmole/hr	**X**	8	hrs/yr	**X**	46 lbs/lbmole **/** (2,000 **X** 1,000,000) =	**0.57**	**tpy - NOx**
NOx (lb/hr) =	25	ppmv	avg	**X**	124,332	lbmole/hr	**X**	46	lbs/lbmole	/	1,000,000 lbs/ppm =	**143**	**lbs/hr - NOx**