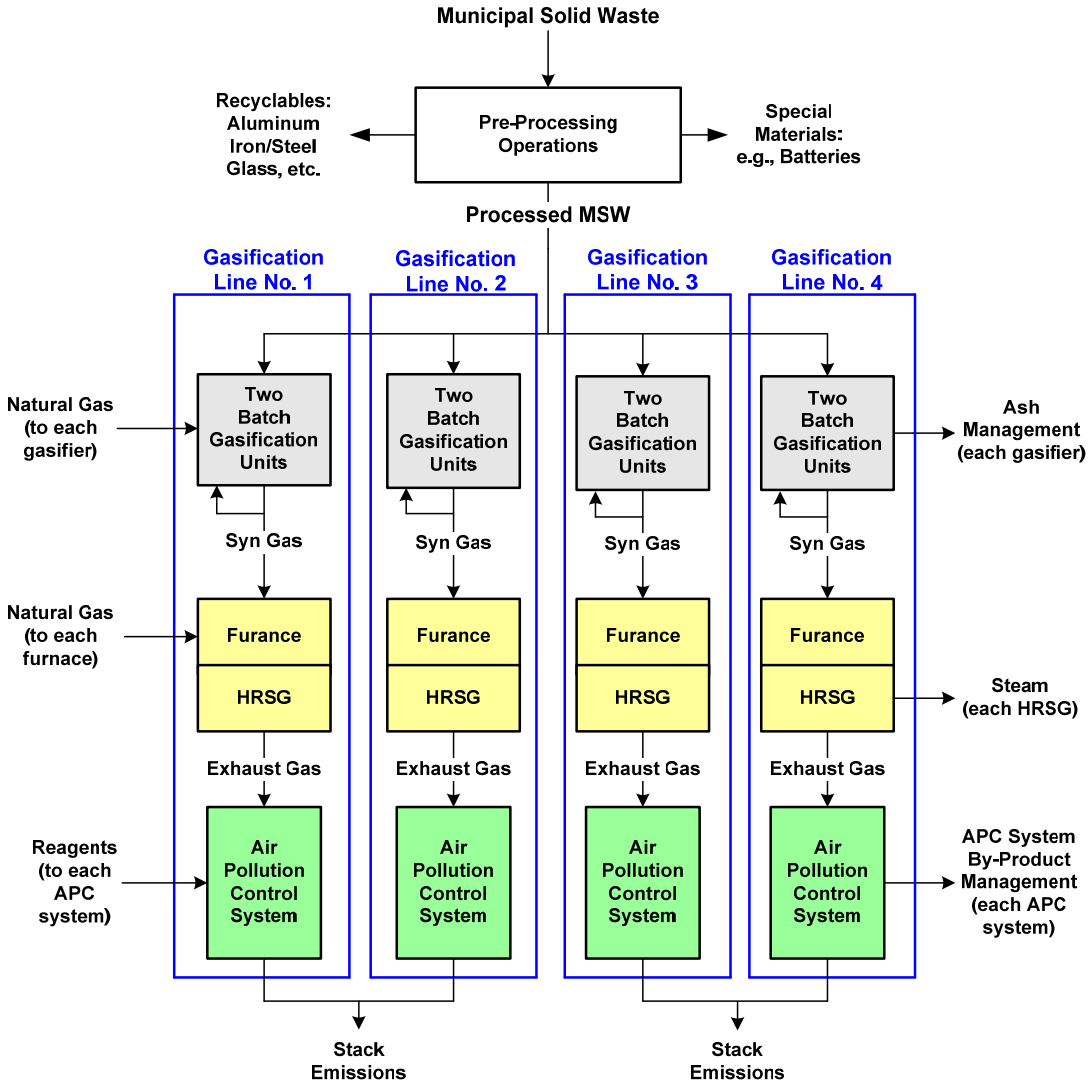
Cleveland Public Power (CPP)
Proposed Ridge Road MSW Processing and Energy Recovery Facility
Summary of Air Permit Application and Basis for Approval

Description of the Proposed Facility

Cleveland Public Power (CPP) proposes to install and operate new air contaminant emissions units at 3727 Ridge Road in Cleveland. Figure 1 is a general process diagram that shows the components of the Kinsei Sangyo technology.

Figure 1
Cleveland Public Power - Ridge Road
MSW Gasification HRSG Project
General Process Flow Diagram



The proposed CPP facility will include emissions units associated with: (1) processing municipal solid waste (MSW) to extract recyclable materials and prepare the MSW for gasification; (2) producing syngas from the processed MSW; (3) combusting the syngas to produce steam for plant operations and electric power generation (less than 25

megawatts and, therefore, not an "electric utility unit"); (4) storing reagents prior to use in the emission control systems; and (5) storing residual materials accumulated from the operation of the Kinsei Sangyo gasifiers and the facility's air pollution control systems and loading the materials for shipment to off-site disposal facilities.

Identification of Emissions Units and Preparation of the Air Permit Application in e-Business/Air Services

The air permit application submitted by CPP includes the eight separate emissions units identified in Table 1. The primary non-exempt significant emissions units are the four identical Gasifier Lines. There are also four exempt insignificant emissions units, including the MSW pre-processing operations, storage of urea used to make ammonia for the nitrogen oxides (NO_x) emission control system and storage and loading of residual by-products that are accumulated from the operations of the air pollution control systems.

Table 1
Proposed New Emissions Units

Emissions Unit ID	Description	Emissions Unit Classification	
		PTI	Title V
TMP166367	MSW Pre-Processing Processing MSW to extract recyclable materials and prepare the MSW feedstock for the gasifiers.	Exempt	Insignificant
TMP166368	Gasifier Line No. 1 Processing line consisting of two batch mode gasifiers, a furnace a HRSG and air pollution control equipment.(1)	Non-Exempt	Significant
TMP166369	Gasifier Line No. 2 Processing line consisting of two batch mode gasifiers, a furnace a HRSG and air pollution control equipment.(1)	Non-Exempt	Significant
TMP166370	Gasifier Line No. 3 Processing line consisting of two batch mode gasifiers, a furnace a HRSG and air pollution control equipment.(1)	Non-Exempt	Significant
TMP166371	Gasifier Line No. 4 Processing line consisting of two batch mode gasifiers, a furnace a HRSG and air pollution control equipment.(1)	Non-Exempt	Significant
TMP166376	Bottom Ash Storage Silo Storage silo for ash removed from the gasifiers.	Exempt	Insignificant
TMP166377	Baghouse Dust (Flyash) Storage Silo Storage silo for flyash removed from the baghouses.	Exempt	Insignificant
TMP166378	Urea Storage Silo Silo for the storage of urea used to make ammonia for the NO_x emission control system.	Exempt	Insignificant

(1) This permit application is based on the Kinsei Sangyo Japan proprietary design and performance specifications.

Minor Stationary Source Determination for New Source Review

The proposed CPP facility is classified as a synthetic minor stationary source pursuant to the Ohio EPA and US EPA New Source Review (NSR) rules and the current air quality attainment/non-attainment designations for Cuyahoga County. The operational restriction associated with the synthetic minor is an annual capacity factor for the operation of the four gasifier lines of no more than 92%.

The Prevention of Significant Deterioration (PSD) provisions of NSR are applicable to proposed new projects located in air quality attainment areas if the proposed annual emissions of the attainment air pollutants are 250 tons per year (TPY) or more and the proposed project is not classified in one of 28 listed source categories. The non-attainment provisions of NSR are applicable to proposed new projects in air quality non-attainment areas if the proposed annual emissions of the non-attainment air pollutants are 100 TPY or more. Fugitive (non-stack) emissions do not count towards the major stationary source thresholds if the proposed new project is not classified in one of 28 listed source categories. The proposed CPP project does not fall into any of the 28 listed source categories. As a result, the PSD applicability threshold for the proposed CPP project is 250 TPY and the non-attainment new source review (NNSR) threshold is 100 TPY.

Table 2 presents the current National Ambient Air Quality Standards (NAAQS) air quality status classifications for Cuyahoga County. All of Cuyahoga County is currently designated non-attainment for the annual average and 24-hour average National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$ (*i.e.*, particulate matter less than or equal to 2.5 microns in diameter). Therefore, the proposed CPP project is classified as a minor stationary source for non-attainment NSR (NNSR) if the annual emissions of $PM_{2.5}$ or sulfur dioxide (SO_2) (a precursor to $PM_{2.5}$) are less than 100 TPY. The area of Cuyahoga County where the proposed CPP facility will be located is currently designated attainment for all of the other NAAQS pollutants. Therefore, the proposed CPP project is classified as a minor stationary source for PSD if the annual emissions of the other NAAQS attainment pollutants (or precursors) are less than 250 TPY.

Table 2
Cuyahoga County
National Ambient Air Quality Standards (NAAQS) Classifications

NAAQS Air Pollutant	Concentration	Averaging Time	Attainment	Non-Attainment	Not Yet Designated
$PM_{2.5}$ (Particulate Matter less than or equal to 2.5 microns in diameter)	15.0 µg/m^3	Annual		√	
	35.0 µg/m^3	24-hr		√	
PM_{10} (Particulate Matter less than or equal to 10 microns in diameter)	150.0 µg/m^3	24-hr	√		
Sulfur Dioxide (SO_2)	80 µg/m^3	Annual	√		
	365 µg/m^3	24-hr	√		
	75 ppb	1-hr			√
Nitrogen Dioxide (NO_2)	100 µg/m^3	Annual	√		
	100 ppb	1-hr			√
Carbon Monoxide (CO)	10,000 µg/m^3	8-hr	√		
	40,000 µg/m^3	1-hr	√		

Table 2 Cuyahoga County National Ambient Air Quality Standards (NAAQS) Classifications					
NAAQS Air Pollutant	**Concentration**	**Averaging Time**	**Attainment**	**Non-Attainment**	**Not Yet Designated**
Ozone	0.08 ppm	8-hr	√		
Lead (Pb)	1.5 µg/m^3	Quarterly	√		
	0.15 µg/m^3	3-month rolling	√(1)		
(1) A small isolated area south of the City of Cleveland is designated non-attainment.					

The total maximum annual emissions of each air pollutant emitted by the proposed CPP project are less than the applicable major stationary source thresholds as presented in Table 3.

Table 3 Maximum Annual Emissions from the Proposed CPP Facility with Kinsei Sangyo Gasifiers vs Major Stationary Source Thresholds			
	Annual Emissions from CPP Facility (TPY)(1)	**Cuyahoga County NSR Major Source Threshold (TPY)**	
Air Pollutant		**Attainment PSD**	**Non-Attainment NNSR**
$PM_{2.5}$ (Particulate Matter less than or equal to 2.5 microns in diameter)	99.8		<100
Sulfur Dioxide (SO_2) (Precursor to $PM_{2.5}$)	99.4		<100
PM_{10} (Particulate Matter less than or equal to 10 microns in diameter)	99.8	<250	
Sulfur Dioxide (SO_2)	99.4	<250	
Nitrogen Dioxide (NO_2)	186.8	<250	
Nitrogen Oxides (NO_x) (Precursor to Ozone)	249.0	<250	
Volatile Organic Compounds (VOC) (Precursor to Ozone)	33.75	<250	
Carbon Monoxide (CO)	111.5	<250	
Lead (Pb)	0.25	<250	
(1) Based on an annual capacity factor for the operation of the four gasifier lines of no more than 92%.			

Applicability of 250 TPY Prevention of Significant Deterioration Threshold. The PSD major stationary source threshold for the proposed CPP project is 100 TPY if the project falls into one of the 28 listed source categories. It is obvious that the proposed CPP project does not fall into 24 of the listed source categories. Four categories require further examination:

(1) Fossil fuel-fired steam electric plants of more than two hundred fifty million British thermal units per hour heat input. The proposed CPP facility will burn a syngas fuel produced from the gasification of MSW. Therefore, the proposed CPP project is not a fossil-fired steam plant.

(2) Municipal incinerators capable of charging more than two hundred fifty tons of refuse per day. The gasifiers for the CPP project do not fall within the category of "municipal incinerators capable of charging more than 250 tons of refuse per day" because the gasifiers do not "burn solid waste for the purpose of reducing the volume of waste by removing combustible matter" and each gasifier will have a maximum daily processing capacity of less than 250 tons of MSW.

(3) Fuel conversion plants. US EPA guidance states that fuel conversion plants process fossil fuels (e.g., converting coal to gas). The gasifiers for the CPP project are not fuel conversion plants because the MSW charged does not involve the conversion of a "fossil fuel".

(4) Fossil fuel boilers (or combinations thereof) totaling more than two hundred fifty million British thermal units per hour heat input. The proposed CPP facility will burn a syngas fuel produced from the gasification of MSW. Therefore, the proposed CPP project does not include fossil fuel boilers and does not fall into this source category.

Review of the Criteria for Approval of the Air Permit-to-Install

The criteria for approval of an air Permit-to-Install application are enumerated in OAC rule 3745-31-05 - Criteria for Decision by the Director. Table 4 summarizes the basis for approving the application submitted by CPP for the proposed Ridge Road facility. An additional explanation for each of the key criterion is provided in this overview of the CPP application.

Table 4
Basis for Approval of the CPP Application

Citation in OAC Rule 3745-31-05	Description of Requirement	CPP Application
(A)(1)	Not prevent or interfere with the attainment or maintenance of applicable ambient air quality standards	The predicted air quality impact from the operation of the proposed CPP facility conforms to Ohio EPA DAPC Engineering Guide #69 and all applicable rules and guidelines.
(A)(2)(a)	Not violate applicable emission standards adopted by the Ohio EPA	The proposed air pollution control systems ensure that the maximum emission rates conform to the applicable Ohio EPA rules.
(A)(2)(b)	Not violate applicable federal NSPS	The proposed CPP facility will meet the requirements in 40 CFR Part 60 Subpart AAAA (applicable to units that combust 35 – 250 tons per day of MSW or refuse-derived fuel).
(A)(2)(c)	Not violate requirements for major new sources or major modifications	The CPP application requests federally enforceable limitations on potential to emit to cap annual emissions to less than the NSR applicability thresholds.

Table 4 Basis for Approval of the CPP Application		
Citation in OAC Rule 3745-31-05	**Description of Requirement**	**CPP Application**
(A)(2)(d)	Not violate applicable NESHAPS or MACT standards	There are no NESHAP or MACT standards that are applicable to the proposed CPP facility.
(A)(3)	Employ BAT when applicable	The proposed air pollution control systems ensure that the maximum emission rates conform to BAT requirements.
(B)	Comply with applicable rules and laws during operation	The proposed air pollution control systems ensure compliance during the operation of the proposed CPP facility.
(C)	Conditional PTIO	CPP does not anticipate the need for a conditional PTO.
(D)	Federally enforceable limitations on potential to emit	The CPP application requests rolling 12-month limitations and proposes adequate and enforceable methods for establishing compliance.
(E)	Ensure compliance with any provisions of the statutes or regulations of the state of Ohio that are not mandated by the Clean Air Act or regulations adopted by the US EPA	The predicted air quality impact from the CPP facility conforms to the following Ohio EPA requirements that are not mandated by the federal CAA: - OAC rule 3745-114-01; - Ohio EPA DAPC Engineering Guide #69, and - Ohio EPA's Air Toxic Policy.
(G)	Provisions for issuance of an express PTIO	The CPP application does not qualify for an express PTIO.
(H)	Site approval for portable sources	The CPP application does not include any portable emissions units.
(I)	Consideration the social and economic impact of the air contaminants, water pollutants, or other adverse environmental impact	The proposed CPP facility is located at a property that is currently licensed as a MSW transfer facility. Other than air emissions, the impact from this facility will be unchanged from the current facility.
(J)	Coordinate review with other Ohio EPA Divisions	The proposed CPP facility is located at a property that is currently licensed as a MSW transfer facility. The criteria for siting a solid waste incineration or waste-to-energy facility are no more stringent than the criteria for siting the transfer facility that is currently located at this property.

Best Available Technology (BAT)

Best Available Technology (BAT) is defined in OAC rule 3745-31-01(T) as follows:

> *"Best available technology" or "BAT" means any combination of work practices, raw material specifications, throughput limitations, source design characteristics, an evaluation of the annualized cost per ton of air pollutant removed, and air pollution control devices that have been previously demonstrated to the director of environmental protection to operate satisfactorily in this state or other states with similar air quality on substantially similar air pollution sources.*

BAT is demonstrated for the proposed CPP project with the use of air pollution control technologies that have been demonstrated to be effective in controlling the pollutants subject to BAT shown in Figure 2 with the BAT emission rates summarized in Table 5.

Figure 2
Cleveland Public Power - Ridge Road
MSW Gasification HRSG Project
Components of the BAT Air Pollution Control System

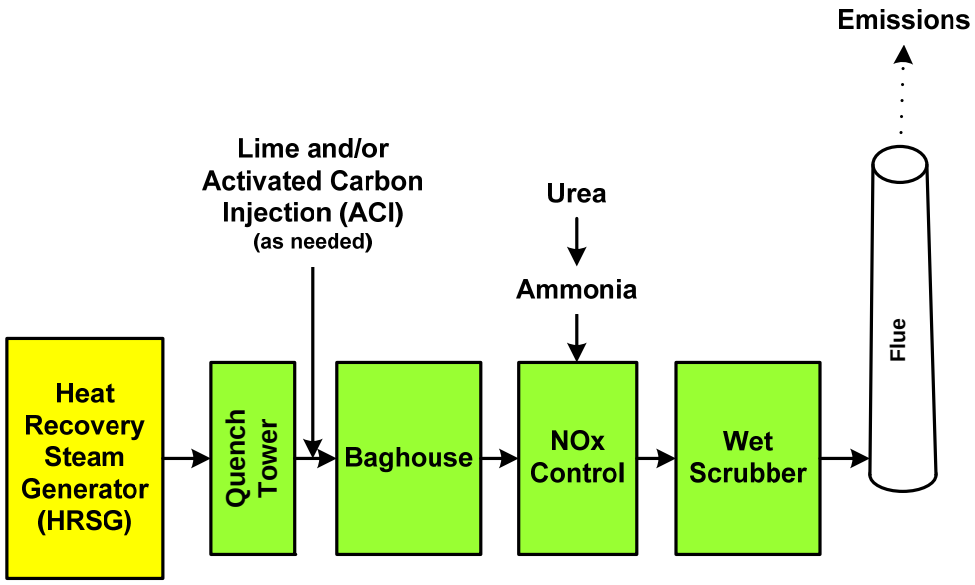


Table 5 Emission Control Systems and BAT Summary[1]			
Emissions Unit(s)	**Emission Control Technology**	**Pollutant(s) Controlled**	**BAT Stack Emission Rate(s)**
MSW Pre-Processing	Localized capture and baghouses venting inside the building with water mists (if needed) at building doorways	Filterable $PM/PM_{10}/PM_{2.5}$	NA
Gasifier Lines No. 1 – No. 4	Sorbent Injection (Lime and/or Activiated Carbon) as needed	Hg and "acid gases"	NA
	Baghouse	$PM/PM_{10}/PM_{2.5}$ and Metal HAPs	$PM/PM_{10}/PM_{2.5}$ = 6.22 lb/hr[2]
	Selective Catalytic Reduction (SCR)	NO_x/NO_2	NO_x = 15.51 lb/hr
	Wet-Flue Gas Desulfurization (Wet-FGD)	SO_2, H_2SO_4, HCl, HF, other "acid gases" and $PM/PM_{10}/PM_{2.5}$	SO_2 = 6.19 lb/hr
	Combustion Controls	CO and VOC	CO = 6.94 lb/hr VOC = 2.10 lb/hr
Sorbent/Reagent Storage	Baghouses integral to the operation of storage silos and pneumatic transfer of materials	Filterable $PM/PM_{10}/PM_{2.5}$	NA
Residuals Storage and Load-Out	Baghouses integral to the operation of storage silos and pneumatic transfer of materials	Filterable $PM/PM_{10}/PM_{2.5}$	NA

(1) The PTIO application is based upon proprietary design and performance specifications for the BAT air pollution control system based on the Kinsei Sangyo Japan gasifiers and furnace.
(2) Estimated 6.22 lb/hr (filterable + condensable). The filterable portion is 2.22 lb/hr.

The BAT control technologies and control measures will also control emissions of "air toxics" that are regulated pursuant to OAC rule 3745-114-01. The maximum hourly emission rate for each "air toxic" has been evaluated pursuant to "Option A" of the Ohio EPA "Air Toxic Policy". The results of that evaluation are presented in the Air Quality Impact section of this summary.

The BAT control technologies, control measures and emission limitations associated with the use of the Kinsei Sangyo Japan proprietary design are equal to or more stringent than the requirements specified in the Ohio State Implementation Plan (SIP) and the applicable federal NSPS at 40 CFR Part 60 Subpart AAAA. Table 6 presents a comparison to benchmark the BAT limits proposed for the CPP project (converted to the relevant units) versus the emission limits in the NSPS Subpart Eb, the NSPS Subpart AAAA and the Mahoning Renewable Energy air permit (PTI No. 02-23003; April 3,

2009). As summarized in Table 6, the BAT limits proposed for the CPP project are equivalent to or more stringent than each of the relevant benchmarks.

Table 6
CPP Proposed BAT Emission Limitations Using the Kinsei Sangyo Technology[(1)] vs Other Benchmark Rules and Recent Ohio EPA BAT Determinations

	NSPS Subpart Eb		NSPS Subpart AAAA		Ohio EPA BAT Mahoning Energy Permit			CPP Proposed BAT[(1)]		
Pollutant	**mg/m^3**	**ppm**	**mg/m^3**	**ppm**	**mg/m^3**	**ppm**	**lb/mmBtu**	**mg/m^3**	**ppm**	**lb/mmBtu**
PM	20		24		20			20		
SO_2		30		30		24			19.5	
NO_x		150		150		75			68	
CO		50		50		50			50	
HCl		25		25		25			2.9	
Dioxin	1.30E-05		1.30E-05		1.30E-05			1.30E-05		
Lead	0.14		0.2		0.14			0.14		
Cadmium	0.01		0.02		0.01			0.01		
Mercury	0.05		0.08		0.05			0.05		
Ammonia						15			15	
H_2SO_4						2			1.2	
HF						0.5			0.5	
VOC							0.026			0.026

(1) This permit application is based on the Kinsei Sangyo Japan proprietary design and performance specifications.

Air Quality Impact

Air quality modeling was completed for the maximum emission rates from the proposed CPP facility using US EPA's AERMOD dispersion model, and in accordance with the requirements of Ohio EPA Engineering Guide #69. The AERMOD dispersion modeling program includes modeling programs AERMET, AERMAP and AERMOD. The Building Profile Input Program Prime (BPIP Prime) preprocessor was run to determine the Good Engineering Practice (GEP) building dimensions for downwash calculations. Meteorological data for AERMET was National Weather Service (NWS) data for years 1984-1988 (Surface: Cleveland, Ohio; Upper Air: Buffalo, NY). The modeling domains obtained for use in AERMAP include Cleveland North, Cleveland South and Lakewood.

The primary receptor grid places receptors at 50 meter intervals along the property line to a distance of 500 meters from the site. A second 100 meter interval receptor grid extends from 500 meters to a distance to 2,000 meters (well over one mile). A total of 2,498 property line and off-site receptors are included in the analysis.

Building parameters were entered according to the site layout. Stacks were located with two flues at the NE corner and two flues at the NW corner of the gasifier building.

Ohio EPA Engineering Guide #69 requires that an air quality modeling analysis be performed for the air pollutants and averaging times presented in Table 7. Although air quality modeling is not required pursuant to Ohio EPA Engineering Guide #69 for mercury or dioxin, CPP elected to include modeling for those two pollutants to

demonstrate the impact from the proposed facility is far less than authorized by the Ohio EPA Air Toxic Policy "Option A".

Table 7 **Ohio EPA (OEPA) Air Quality Modeling Emission Thresholds**			
Air Pollutant		**OEPA Engineering Guide #69 Modeling Thresholds (TPY)**	**AQ Modeling Required for the Proposed CPP Project? (Y/N)**
$PM_{2.5}$ (Particulate Matter less than or equal to 2.5 microns in diameter)		10[(1)]	Y
PM_{10} (Particulate Matter less than or equal to 10 microns in diameter)		10	Y
Sulfur Dioxide (SO_2)		25	Y
Nitrogen Dioxide (NO_2)		25	Y
Carbon Monoxide (CO)		100	Y
Lead (Pb)		0.6	N
Air Toxics	Hydrogen Chloride (HCl)	1.0	Y
	Sulfuric Acid (H_2SO_4)		Y
	Mercury (Hg)		N
	Dioxin		N
	Lead Oxides		N
	Cadmium (Cd)		N
	Hydrogen Fluoride (HF)		N
[(1)] Engineering Guide #69 does not identify a modeling threshold for $PM_{2.5}$. This analysis assumes Ohio EPA will require $PM_{2.5}$ air quality modeling at the same threshold as PM_{10}.			

Table 8 presents the maximum off-site air quality impact that Ohio EPA rules and guidelines deem acceptable for each pollutant for which air quality modeling is required.

Table 8 **Required Demonstrations for Air Quality Modeling**		
Air Pollutant		**Target Concentrations**
$PM_{2.5}$ (Particulate Matter less than or equal to 2.5 microns in diameter)		Demonstrate compliance with the annual and 24-hr NAAQS (15 $\mu g/m^3$ and 35 $\mu g/m^3$, respectively).
PM_{10} (Particulate Matter less than or equal to 10 microns in diameter)		Demonstrate compliance with Ohio EPA Acceptable Incremental Impact (15 $\mu g/m^3$).
Sulfur Dioxide (SO_2)		Demonstrate compliance with the 1-hr NAAQS (197 $\mu g/m^3$) and demonstrate compliance with the annual and 24-hr Ohio EPA Acceptable Incremental Impact (45.5 $\mu g/m^3$ and 10 $\mu g/m^3$, respectively).
Nitrogen Dioxide (NO_2)		Demonstrate compliance with the 1-hr NAAQS (188 $\mu g/m^3$) and demonstrate compliance with the annual Ohio EPA Acceptable Incremental Impact (12.5 $\mu g/m^3$).
Carbon Monoxide (CO)		Demonstrate compliance with the 1-hr and 8-hr Ohio EPA Acceptable Incremental Impact (10,000 $\mu g/m^3$ and 2,500 $\mu g/m^3$, respectively).
Air Toxics	Hydrogen Chloride (HCl)	Demonstrate compliance with the Maximum Acceptable Ground Level Concentration (MAGLC) established by the Ohio EPA Air Toxic Policy "Option A".
	Sulfuric Acid (H_2SO_4)	
	Mercury (Hg)	
	Dioxin	

Air quality modeling for each air pollutant was performed in accordance with the BAT emission limits associated with the use of the Kinsei Sangyo Japan proprietary design for the proposed CPP facility. The predicted maximum off-site air quality impact for each pollutant emitted by the operation of the proposed CPP facility is well within the guidelines established by Ohio EPA as summarized in Table 9a through Table 9n.

Table 9a
Annual $PM_{2.5}$ NAAQS Analysis
@ 6.22 lb/hr = 0.78 g/sec

Year	Maximum Predicted Off-Site Impact ($\mu g/m^3$)	Average Predicted Off-Site Impact ($\mu g/m^3$)	Post Processor Value[(1)] ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
1984	4.45	4.11	5.73	15
1985	5.23	4.82		
1986	6.02	5.56		
1987	6.34	5.85		
1988	6.62	6.11		

(1) Post Processor $PM_{2.5}$ values were obtained using the EPA methodology inherent in the Bee-Line "PM Post" software. PM Post annual NAAQS calculations are completed using the EPA's guidance that the NAAQS value be calculated as the average of the annual mean $PM_{2.5}$ concentration over 3 years of monitoring. Calculations are done at each receptor; the highest of these values is the design value presented above.

Table 9b
24- hour $PM_{2.5}$ NAAQS Analysis
@ 6.22 lb/hr = 0.78 g/sec

Year	Maximum Predicted Off-Site Impact ($\mu g/m^3$)	Post Processor Value[(1)] ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
1984	22.42	19.76	35
1985	21.33		
1986	21.95		
1987	23.31		
1988	19.96		

(1) Post Processor $PM_{2.5}$ values were obtained using the EPA methodology inherent in the Bee-Line "PM Post" software. PM Post 24-hr averaging values are calculated using the EPA's guidance that the 24-hr $PM_{2.5}$ NAAQS calculation be the "average of the 98th-percentile 24-hour values over 3 years of monitoring". Calculations are done at each receptor; the highest of these values is the design value presented above.

Table 9c 24-Hour PM_{10} Ohio Acceptable Incremental Impact Analysis @ 2.22 lb/hr = 0.28 g/sec			
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Second High Predicted Off-Site Impact ($\mu g/m^3$)**	**Ohio Acceptable Incremental Impact ($\mu g/m^3$)**
1984	8.00	7.11	15
1985	7.61	7.05	
1986	7.83	7.33	
1987	8.32	7.58	
1988	7.12	6.93	

Table 9d 1-Hour SO_2 NAAQS Analysis @ 6.19 lb/hr = 0.78 g/sec			
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Post Processor Value[(1)] ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**
1984	50.06	44.59	197
1985	50.33		
1986	59.18		
1987	48.91		
1988	55.05		

(1) Post Processor SO_2 values were obtained using the EPA methodology inherent in the Bee-Line "SO2 Post" software. SO_2 Post values are calculated using the EPA's guidance that the 1-hr NAAQS calculation be the "3-year average of the 99th-percentile of the annual distribution of daily maximum 1-hour concentrations." Calculations are done at each receptor; the highest of these values is the design value presented above.

Table 9e Annual SO_2 Ohio Acceptable Incremental Impact Analysis @ 6.19 lb/hr = 0.78 g/sec			
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Adjusted Predicted Off-Site Impact[(1)] ($\mu g/m^3$)**	**Ohio Acceptable Incremental Impact ($\mu g/m^3$)**
1984	4.43	4.09	10
1985	5.20	4.80	
1986	6.00	5.54	
1987	6.31	5.83	
1988	6.59	6.09	

(1) The adjusted value is the maximum predicted off-site concentration with an annual use factor of 92%.

Table 9f 24-Hour SO_2 Ohio Acceptable Incremental Impact Analysis @ 6.19 lb/hr = 0.78 g/sec			
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Second High Predicted Off-Site Impact ($\mu g/m^3$)**	**Ohio Acceptable Incremental Impact ($\mu g/m^3$)**
1984	22.33	19.83	45.5
1985	21.24	19.67	
1986	21.86	20.44	
1987	23.21	21.16	
1988	19.88	19.32	

Table 9g 1- hour NO_2 NAAQS Analysis @ 11.63 lb/hr = 1.47 g/sec			
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Post Processor Value[(1)] ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**
1984	94.05	79.66	188
1985	94.55		
1986	111.19		
1987	91.90		
1988	103.43		

(1) Post Processor NO_2 values were obtained using the EPA methodology inherent in the Bee-Line "NO_2 Post" software. NO_2 Post values are calculated using the EPA's guidance that the NAAQS standard be the "3-year average of the 98th-percentile of the annual distribution of daily maximum 1-hour concentrations". Calculations are done at each receptor; the highest of these values is the design value presented above.

Table 9h Annual NO_2 Ohio Acceptable Incremental Impact Analysis @ 11.63 lb/hr = 1.47 g/sec			
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Adjusted Predicted Off-Site Impact[(1)] ($\mu g/m^3$)**	**Ohio Acceptable Incremental Impact ($\mu g/m^3$)**
1984	8.33	7.59	12.5
1985	9.78	8.91	
1986	11.27	10.27	
1987	11.86	10.81	
1988	12.39	11.29	

(1) The adjusted value is the maximum predicted off-site concentration with an annual use factor of 92%.

Table 9i 1- hour CO Ohio Acceptable Incremental Impact Analysis @ 6.94 lb/hr = 0.88 g/sec			
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Second High Predicted Off-Site Impact ($\mu g/m^3$)**	**Ohio Acceptable Incremental Impact ($\mu g/m^3$)**
1984	56.13	53.86	10,000
1985	56.43	53.55	
1986	66.36	58.63	
1987	54.85	51.19	
1988	61.72	61.10	

Table 9j 8- hour CO Ohio Acceptable Incremental Impact Analysis @ 6.94 lb/hr = 0.88 g/sec			
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Second High Predicted Off-Site Impact ($\mu g/m^3$)**	**Ohio Acceptable Incremental Impact ($\mu g/m^3$)**
1984	33.32	29.28	2,500
1985	30.52	28.45	
1986	28.93	27.12	
1987	34.11	29.77	
1988	33.64	30.25	

Table 9k 1- hour HCl MAGLC Analysis @ 0.52 lb/hr = 0.07 g/sec		
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**HCl MAGLC ($\mu g/m^3$)**
1984	4.30	2,199
1985	4.32	
1986	5.08	
1987	4.20	
1988	4.73	

Table 9l 1- hour H_2SO_4 MAGLC Analysis @ 0.58 lb/hr = 0.07 g/sec		
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**H_2SO_4 MAGLC ($\mu g/m^3$)**
1984	4.72	200
1985	4.74	
1986	5.58	
1987	4.61	
1988	5.19	

Table 9m 1- hour Mercury MAGLC Analysis @ 0.006 lb/hr = 0.0007 g/sec		
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Mercury MAGLC ($\mu g/m^3$)**
1984	0.04	10
1985	0.05	
1986	0.05	
1987	0.04	
1988	0.05	

Table 9n 1- hour Dioxin MAGLC Analysis @ 1.44E-06 lb/hr = 1.81E-07 g/sec		
Year	**Maximum Predicted Off-Site Impact ($\mu g/m^3$)**	**Dioxin MAGLC[(1)] ($\mu g/m^3$)**
1984	1.17E-05	2.00E-03
1985	1.17E-05	
1986	1.38E-05	
1987	1.14E-05	
1988	1.28E-05	

(1) The dioxin MAGLC was calculated based on the assumption that all of the dioxin emissions are 2,3,7,8-TCDD. This MAGLC is based on recommended TWA exposure limits that have not yet been adopted into the ACGIH TLV handbook.

The AERMOD input and output files associated with each pollutant have been submitted to the Ohio EPA.