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June 4, 2007

VIA EMAIL AND FEDERAL EXPRESS

Daniel F. Caruso
Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Connecticut Siting Council Petition No. 805 – Ansonia Generation LLC Petition for a Declaratory Ruling that No Certificate of Environmental Compatibility and Public Need Is Required for the Proposed Construction, Maintenance, and Operation of a 58.4-MW Combined Heat and Power Natural Gas-Fired Electric Generating Facility and Transmission Line Tap Located at 75 Liberty Street, Ansonia, Connecticut

Dear Chairman Caruso:

On behalf of Ansonia Generation LLC, and as requested at the Connecticut Siting Council's May 9, 2007 hearing in this matter, enclosed are an original and fifteen (15) copies of Late-Filed Exhibit 1 concerning the effect of stack height on maximum ground-level ambient air quality concentrations.

Please contact me with any questions concerning this filing.

Very truly yours,

BROWN RUDNICK BERLACK ISRAELS LLP

Philip M. Small

Enclosures

cc: Service List
Bartholomew R. Flaherty III, Chairman, City of Ansonia Planning and Zoning Commission
Peter W. Crabtree, City of Ansonia Zoning Enforcement Officer
Oswald Ingles, Consultant, City of Ansonia Planning and Zoning Commission

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Ansonia Generation LLC (AnGen) has performed a dispersion modeling analysis to evaluate impacts from AnGen's proposed electric generating facility. Specifically this analysis determined the maximum ground-level ambient air quality concentrations from the proposed facility and in addition investigated the effect of stack height on maximum impacts. The analysis used the EPA approved SCREEN3 dispersion model. The methods used were consistent with federal and State regulatory requirements and guidelines.

The EPA Guideline on Air Quality Models (Revised) (EPA, 1997) describes two levels of modeling; screening modeling and refined modeling. The first level, screening modeling, normally uses simple models or simplified versions of more complex models with assumed worst-case meteorological conditions to yield conservative upper bound predictions. The second level, refined modeling, uses models of a more complex nature along with actual meteorological data.

For this analysis the EPA SCREEN3 dispersion model was used. SCREEN3 is a screening version of the ISC3 model. The SCREEN3 model is a single source Gaussian plume model that provides maximum ground-level concentrations for point, area, flare, and volume sources, which incorporates building downwash algorithms as well as cavity zone algorithms. The model incorporates the effects of simple elevated terrain and in complex terrain it will estimate 24-hour average concentrations due to plume impaction using the VALLEY model 24-hour screening procedure.

The purpose of this analysis was to determine the maximum impacts from the proposed facility and ascertain the effect of stack height on maximum impacts. Stack gas exit characteristics were therefore consistent with 100% load and the maximum proposed emission rate. For the stack height sensitivity analysis five stack heights were investigated: the proposed 92-foot stack and four others at 100, 110, 120, 130 feet.

As a screening level model, SCREEN3 uses an assumed set of discrete meteorological conditions to represent the range of possible combinations of wind speed and stability class. Wind direction is not specifically accounted for in the model. A single straight line receptor grid with the maximum terrain height through the 360-degree horizon is used rather than a complete grid. This assumption can lead to a significant overestimation of concentrations, especially over longer averaging periods, as certain combinations of wind speed, wind direction, stability class and terrain height may not occur on a frequent basis.

The results of the analysis are provided in Table 1. A review of Table 1 shows that the maximum predicted concentrations are all below both the National Ambient Air Quality Standards (NAAQS) and the CTDEP/EPA significant impact levels (SIL). The significant impact are interpreted by the EPA and CTDEP as representing the ambient impact level below which no further analysis of the new source's impacts are required. The primary purpose of comparing a new source's modeled impacts to the SILs is to determine if additional dispersion modeling is warranted and if so to establish the source's significant impact area (SIA). When impacts are greater than the SILs additional modeling is typically required. Major background sources located within the source's pollutant-specific significant impact area (SIA), as well as other sources which could significantly interact within the proposed source's SIA, are generally modeled as part of this additional air quality impact analysis. The SILs therefore are therefore a regulatory tool used to determine the level of analysis required by a new source to demonstrate compliance with the applicable air quality standards.

The results also show that the stack height has little impact on the maximum concentration. The maximum impacts occur in complex terrain to the northeast of the facility. The terrain in these areas exceeds 300 feet msl as compared to the proposed stack height of 142 ft msl (92-foot stack plus 50 feet base elevation). The investigated stack heights of 92 – 130 feet above plant base elevation therefore have little effect on the maximum predicted impacts.

To investigate the effect of stack height on impacts the maximum predicted concentrations as a function of stack height and downwind distance were plotted. The NO_x annual average concentrations and PM_{10} 24-hour average concentrations are shown in Figures 1 and 2 respectively. These pollutant/averaging period combinations were chosen because they represent the higher impacts as a percentage of the SIL. In addition, the shape of the annual impact curve is identical to that of the other averaging periods with the exception of the 24-hour average due to a difference in the way the Valley algorithm calculates the 24-hour average as compared to the simple terrain algorithm.

A review of Figure 1 shows that all impacts are less than the SIL and that maximum impacts occur at 1200 meters. Figure 1 also reveals a secondary maximum at 200 meters which decreases with increasing stack height. This secondary maximum is the result of aerodynamic downwash.

Figure 2 indicates that maximum impacts occur in the near field 200 meters downwind. This peak can be attributed to aerodynamic downwash, the effects of which diminish with increasing stack height. The secondary peak at 1200 meters in the complex terrain is significantly lower when compared to Figure 1. As stated above, this is due to an anomaly in the way the 24-hour averaging period is calculated by the Valley algorithm as opposed to the simple terrain algorithm.

The results of this screening level model analysis documents that the maximum air quality impacts attributable to the proposed project are less than the EPA and CTDEP significant impact levels and therefore would not cause or contribute to a violation of the NAAQS. Therefore at the proposed stack height of 92 feet, the public health would be protected, including the health of sensitive populations such as asthmatics, children and the elderly. The results of the stack height sensitivity analysis show that maximum predicted impacts are not significantly affected by stack height. A taller stack will decrease predicted concentrations in the near field 200 meters downwind from the stack. However, the cost of increasing the stack above 92 feet would be roughly $5,000 per foot.

It is important to remember that this analysis used screening techniques only. These techniques while simpler to use are very conservative. Use of more refined modeling techniques would likely yield significantly lower results.

Table 1: Comparison of Maximum Predicted Concentrations to the NAAQS and SIL

Pollutant	***Avg Pd***	***Primary NAAQS***	***Secondary NAAQS***	***SIL***	***Predicted Concentrations (ug/m^3)***				
					92-Ft	***100-Ft***	***110-Ft***	***120-Ft***	***130-Ft***
NO_2	Annual	100	100	1	0.83	0.82	0.82	0.81	0.81
SO_2	Annual	80	None	1	0.21	0.21	0.20	0.20	0.20
	24-hr	365	None	5	0.81	0.72	0.62	0.51	0.50
	3-hr	None	1,300	25	2.07	2.06	2.04	2.03	2.01
PM_{10}	Annual	50	50	1	0.88	0.88	0.87	0.87	0.86
	24-hr	150	150	5	3.46	3.09	2.67	2.17	2.15
$PM_{2.5}$	Annual	15	15	NA	0.88	0.88	0.87	0.87	0.86
	24-hr	65	65	NA	3.46	3.09	2.67	2.17	2.15
CO	8-hr	10,000	10,000	500	7.20	7.15	7.10	7.05	7.00
	1-hr	40,000	40,000	2,000	9.60	9.54	9.46	9.40	9.34

Figure 1: Predicted Annual NOx Concentrations as a Function of Stack Height

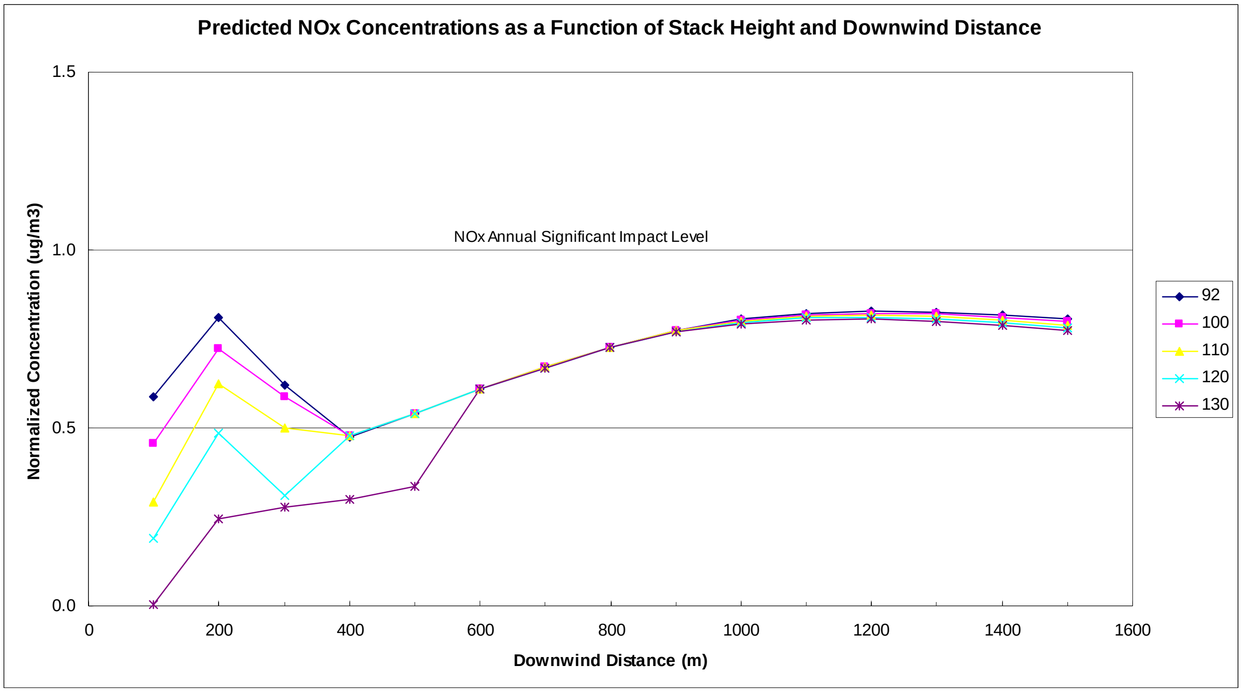

Figure 2: Predicted 24-hr PM10 Concentrations as a Function of Stack Height