State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

Division of Air Quality
Air Quality Permitting Element
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MARK MAURIELLO
Acting Commissioner

MEMORANDUM

TO: Air Quality Permitting Staff

FROM: John Preczewski, Assistant Director

SUBJECT: Stack Height Equivalents for Use in First Level Screening Analyses for Diesel Engines

DATE: June 10, 2009

This provides alternate stack heights that can be used when conducting a First Level Risk Screening Analysis for diesel engines. These alternate stack heights are outlined in the following Table and are to be used only for stacks with a vertical discharge direction:

Engine Category	Alternate Stack Height
< 500 horsepower (HP) (< 3.5 MMBTU/hr)	Height in feet on Emission Point Inventory Plus 25 feet
500 – 1500 HP (3.5 – 10.5 MMBTU/hr)	Height in feet on Emission Point Inventory Plus 50 feet
> 1500 HP (> 10.5 MMBTU/hr0	Height in feet on Emission Point Inventory Plus 65 feet

The alternate stack heights are based on the anticipated plume rise from the indicated engine category. Examples of the effect on the first level risk screening cancer risk predictions are given below for typical sources in each category with a property line distance of 200 feet. The percent reduction in using an effective stack height for diesel engines versus only the stack height is listed.

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Engine Category	Stack height listed in emission point inventory (feet)	Effective Stack Height (feet)	Percent Reduction in Cancer Risk When Using the Effective Stack Height as Opposed to Stack Height Only
< 500 horsepower (HP) (< 3.5 MMBTU/hr)	10	35	62%
500 – 1500 HP (3.5 – 10.5 MMBTU/hr)	20	70	84%
> 1500 HP (> 10.5 MMBTU/hr)	30	95	86%

All other procedural guidelines concerning the determination of health risk should be followed.