5.3 How are hourly NOx emissions determined?

The Appendix E methodology is summarized in Table 12. The hourly NOx emission rate

Table 12: Appendix E Methodology for Determining NOx Emissions from Oil-and Gas-Fired Peaking Units

To use Appendix E to determine . . .	The following data must be collected . . .	And the following calculations must be performed . . .
NO_x emission rate (lb/mmBtu)	The fuel flow rate must be continuously monitored, using an Appendix D fuel flowmeter; and Periodic fuel sampling, according to Appendix D, is required to determine the GCV.	Use the measured fuel flow rates and GCV to determine the hourly unit heat input rate; and Determine from the correlation curve the NO_x emission rate that corresponds to the measured hourly heat input rate.
NO_x mass emissions (lb)	The fuel flow rate must be continuously monitored, using an Appendix D fuel flowmeter; and Periodic fuel sampling, according to Appendix D, is required to determine the GCV; and The unit operating time must be monitored.	Use the measured fuel flow rates and GCV to determine the hourly unit heat input rate; and Determine from the correlation curve the NO_x emission rate that corresponds to the measured hourly heat input rate; and Multiply together the measured hourly heat input rate, the NO_x emission rate from the correlation curve, and the unit operating time.

is determined by measuring the hourly heat input rate.28 The DAHS then reads and records the corresponding NO_x value from the Appendix E correlation curve29. To calculate the hourly NO_x mass emissions, the unit operating time30 must also be known.

If different fuels are co-fired in an Appendix E unit, there are two possible ways of determining the hourly NO_x emission rate:

• Calculate the heat input rate for each type of fuel combusted during the hour, using the fuel flow rate and the GCV. Then, determine a NO_x emission rate for each fuel from its correlation curve and use Equation E-2 in Appendix E to calculate a Btu-weighted hourly NO_x emission rate for the unit; or

• If a consistent fuel mixture is always combusted in the unit (i.e., if the composition of the mixture does not vary by more than ±10%), a single correlation curve for the mixture may be derived, rather than developing separate curves for the individual fuels. If a unit qualifies to use this option, the hourly heat input rate will be a composite

value31, derived from the individual fuel flow rates, the GCV values, the fuel usage times32, and the unit operating time[30].