

Workgroup Recommendations and Other Potential Control Measures
Stationary Combustion Sources Workgroup

SCS004A – Process Heaters & Boilers in a Petroleum Refinery

Control Measure Summary	Emissions (tons/year) in NJ State*	
<p>2002 existing measure: N.J.A.C. 7:27-19.7 Heaters and boilers burning liquid fuel are equipped with Low NOx burners. Most gas fired heaters and boilers in New Jersey are equipped with Ultra-Low NOx Burners.</p>	NOx in 2002	3003
<p>Candidate Measure 1: Replace Low NOx burners with Ultra-Low NOx Burners (ULNB) and burn gas fuel only</p> <p>Emission Reductions: < 40% of NOx</p> <p>Control Efficiency: 75- 90% NOx</p> <p>Control Cost*: \$1100 per ton of NOx removed</p> <p>Timing of Implementation: Already in place in majority of the units.</p> <p>Implementation Area: New Jersey</p>	NOx 2002 Base: Reduction: 2009 Remaining:	3003 <u>-1149</u> 1854
<p>Candidate Measure 2: Use Selective Catalytic Reduction (SCR) on boilers and heaters with heat input capacity of 250 MMBtu/hr or greater</p> <p>Emission Reductions: < 40% of NOx</p> <p>Control Efficiency: 85 to 90% NOx</p> <p>Control Cost*: \$2400 to \$7400 per ton of NOx removed.</p> <p>Timing of Implementation: Already in place for some boilers and large process heaters.</p> <p>Implementation Area: New Jersey</p>		

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Policy Recommendation of State/Workgroup Lead: Ultra-Low NO_x Burners (ULNB) using gaseous fuel is recommended for all cases. SCR is recommended for large capacity heaters and boilers.

Brief Rationale for Recommended Strategy: ULNB is a low cost technology successfully applied to boilers and process heaters of various designs. SCR can achieve high NO_x removal at a reasonable cost. This technology has been successfully applied to boilers and large capacity process heaters.

* - Data based on the Draft Technical Support Document for “Assessment of Control Technology Options for Petroleum Refineries in the Mid-Atlantic Region” by Mid-Atlantic Regional Air Management Association (MARAMA). NJDEP is working with other MARAMA States to further develop the regulatory strategy for this source category for the region. Further details on the MARAMA efforts can be found at www.marama.org.

Disclaimer – The recommendations contained within this white paper do not constitute official state decisions nor reflect any pending regulatory or nonregulatory actions. The NJDEP welcomes public feedback on this (or any other) white paper.