UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 15 2011

OFFICE OF
AIR AND RADIATION

Ajay Joshi
Retrofit Commercial Manager
Johnson Matthey
Emission Control Technologies
380 Lapp Road
Malvern, PA 19355

Dear Mr. Joshi:

The U.S. Environmental Protection Agency (EPA) has reviewed your request for verification of Johnson Matthey's Selective Catalytic Reduction Technology (SCCRT) for on-road heavy-duty diesel engines. The Johnson Matthey SCCRT combines a passive catalyzed diesel particulate filter (DPF) system with a urea-based selective catalytic reduction (SCR) technology. Based on our evaluation of your verification application, test data and additional information provided, EPA hereby verifies that this technology reduces emissions of certain criteria pollutants by the percentages described in the table below.

This technology is approved for use on the following engines and/or vehicles provided all of the required operating criteria are met as described below:

On-highway, 4-cycle, EGR and non-EGR, heavy-duty diesel engines rated between 250 and 500 hp and originally manufactured from 1998 through 2006 model years.

Technology	Particulate Matter (PM) %	Carbon Monoxide (CO) %	Hydrocarbons (HC) %	Oxide of Nitrogen (NOx) %
SCCRT	90	85	90	70

The following operating criteria must be met in order for appropriately retrofitted engines to achieve the aforementioned emissions reductions:

1) Must be operated on ULSD fuel (15 ppm).
2) Engine exhaust temperature must be greater than 240°C for 40% of operation. As there may be significant variations from application to application, Johnson Matthey will review each vehicle's operating conditions and perform temperature data-logging prior to retrofitting a vehicle with their SCRT system to ensure compatibility. In the event that a vehicle's application and/or duty cycle changes,

temperature data-logging must be repeated to confirm that engine exhaust temperature still meets the above criteria.

3) Engine's exhaust must produce a NOx/PM ratio of at least 8, with an optimum approaching 20. (Johnson Matthey will assess the suitability of candidate engines, based upon the applicable emission standards or emission test data.)
4) The engine must not have a pre-existing original equipment manufacturer (OEM) DPF or have been retrofitted with a DPF.
5) The engine may or may not have a pre-existing OEM or retrofitted diesel oxidation catalyst (DOC).
6) Each installation will be equipped with a monitoring system that displays warning light(s) visible to the operator for low urea tank level, high back pressure, high inlet temperature and system abnormalities. The monitoring system will also store diagnostic error codes related to urea tank level and system malfunctions.
7) The vehicle shall not be equipped with a crankcase oil burning system and the engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
8) Fuel additives may not be mixed with fuel unless explicitly approved by EPA for use with this device.
9) The SCCRT must use diesel exhaust fluid (DEF) produced, handled and transported in accordance with ISO 22241.
10) The vehicle or equipment shall not be sold or operated in geographic areas where the DEF solution may freeze (-11°C).
11) To ensure the appropriate urea is purchased, the customer is required to maintain urea purchase receipts and refill records and make them available to Johnson Matthey upon request. Urea usage log and mileage records will be collected and analyzed by Johnson Matthey on a biannual basis.

Information on the SCCRT technology, percent reductions, applicable engines, and in-use testing program will be posted on the EPA's National Clean Diesel Campaign/Diesel Retrofit Verification website (http://www.epa.gov/otaq/retrofit/verif-list.htm). As you know, Johnson Matthey will be responsible for completing the required in-use testing program and for submitting all in-use testing data to EPA.

Thank you for participating in EPA's National Clean Diesel Campaign. If you have any questions or comments, please contact Michael Geller, of my staff, at (202) 343-9295.

Sincerely,

Jim Blubaugh

Jim Blubaugh, Deputy Director
Transportation and Climate Division
Office of Transportation and Air Quality