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.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Particulate Matter (PM) %</th>
<th>Carbon Monoxide (CO) %</th>
<th>Hydrocarbons (HC) %</th>
<th>Oxide of Nitrogen (NOx) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCCRT</td>
<td>90</td>
<td>85</td>
<td>90</td>
<td>70</td>
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</table>

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 SCR 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, Deputy Director
Transportation and Climate Division
Office of Transportation and Air Quality