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**Case No. 503: Johnson Matthey DOC Controls PM from
Emergency Standby Caterpillar 3412 Diesel Engine**

Diesel Oxidation Catalyst (DOC) has proven to be effective in achieving low to moderate reductions in particulate matter emissions, while simultaneously reducing CO and HC. To meet SCAQMD Rule 1470 for emergency backup diesel engines, Cal State Fullerton had to reduce PM emissions by 20%. Johnson Matthey's Diesel Catalytic Converter (DCC™), a high performance DOC was chosen.

SCAQMD PM Limit.....0.15 g/bhp-hr
Expected PM Reduction.....20%
Expected CO Reduction.....90%
Expected HC Reduction... ..80%

Background

South Coast AQMD Rule 1470 requires owners of new and existing emergency backup diesel engines greater than 50 Hp to control particulate emissions. Rule 1470 was developed in response to the California Air Resources Board's Airborne Toxics Control Measure (ATCM). Quinn Power Systems, a Caterpillar engine distributor was contacted by Cal State Fullerton for help. Quinn Power in turn contacted JM.

Having installed over 30,000 DCCs on trucks and buses, Johnson Matthey is experienced with DOC design and manufacturing. In this case, the requirement to reduce PM from an uncontrolled level of 0.16 g/bhp-hr to meet the limit of 0.15 g/bhp-hr was easily achieved with a standard DOC.

In addition to the DCC, Johnson Matthey can also supply California ARB verified CRT® particulate filter control systems for 90+% PM reduction.

Johnson Matthey SSEC has a wealth of experience in air pollution control applications, including maintenance service to complement initial pilot trials and its design and installation expertise.



**Johnson
Matthey DCC™**

Summary

- **Product:** Johnson Matthey DCC™
- **Application:** Caterpillar 3412 diesel engine
- **Customer:** California State University at Fullerton
- **Location:** Fullerton, CA
- **Installed By:** Quinn Power Systems
- **Date Installed:** July 2005
- **Operation:** Emergency standby
- **Pollutants:** PM, CO and HC
- **Comments:** Johnson Matthey's DCC easily met the 0.15 g/bhp-hr PM limit by reducing the uncontrolled PM by 20%.

