Air Resources Board

Mary D. Nichols, Chairman
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Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

September 06, 2016

Mr. Gregory D. Hoenert, Manager
Global Emissions Certification and Compliance
Large Power Systems Division (MOS 11)
Caterpillar Inc.
P.O. Box 600
Mossville, Illinois 61552

Dear Mr. Hoenert:

This letter responds to Caterpillar / Progress Rail Services request for a California Air Resources Board (ARB) verification for the Progress Rail PR30 locomotive. Progress Rail Services, a Caterpillar subsidiary, is the manufacturer of the PR30 locomotive, an intermediate line haul locomotive.

The PR30 locomotive is a Progress Rail remanufactured locomotive equipped with a Caterpillar 3516C-HD diesel engine and Caterpillar Clean Emissions Module (CEM) that achieves near U.S. Environmental Protection Agency (U.S. EPA) Tier 4 emission levels. The CEM is a Caterpillar developed exhaust after-treatment system that includes urea based selective catalytic reduction and a diesel oxidation catalyst technology. The PR30 is a four axle (PR30B) or six axle (PR30C) model built off of GP-38/40 and SD40-2 locomotive chassis.

The test locomotive (SJVR 3003) completed its required 3,000-hour field trial operating within the San Joaquin Valley Railroad in California. Specifically, SJVR 3003 accumulated its demonstration hours in the Fresno and Bakersfield areas of California. Southwest Research Institute (SwRI) performed all emission tests during this in-use field demonstration. SwRI has published a final report titled "Progress Rail PR30 Locomotive SJVR3003 3000-Hour Emission Test Report" dated March 2016 (SwRI 03.19533) that includes a description of the test locomotive, the exhaust emission test procedures, and exhaust emission test results before and after the field trial.

Based on ARB staff's evaluation of the application, the test data, and additional information provided, ARB staff hereby verifies that this locomotive configuration and technology achieves near U.S.EPA Tier 4 line haul emission levels. Specifically, ARB staff has verified the PR30 locomotive achieves NOx and PM emission levels[1] of 1.3 and 0.03 g/bhp-hr, respectively, at the end of the demonstration period. This verification will be applicable to the four axle PR30B and six axle PR30C equipped with Caterpillar's 3516C-HD engine and Clean Emissions Module.

If you have any questions about this matter, please contact Mr. Michael Jaczola, Staff Air Pollution Specialist, Rail Strategies Section, at (916) 327-5607 or at mjaczola@arb.ca.gov.

Sincerely,

Elizabeth Yura, Chief
Emissions Assessment Branch
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Attachment(s)

cc: See next page.

[1] Overall average emission levels during 3,000 hour in-use demonstration period using the line-haul duty cycle or when used in line-haul applications.

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Mr. Michael Jaczola
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