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July 18, 2016

Clerk of the Board
California Air Resources Board
1001 Eye Street
Sacramento, California 95814

Subj: Proposed Regulation for Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities

Dear California Air Resources Board (CARB):

These comments address California Environmental Protection Agency's efforts to minimize greenhouse gas emissions and volatile organic compounds (VOCs) for oil & natural gas facilities in a technically feasible and cost-effective manner.

CARB states:

The proposed regulation will reduce...emissions by over fifty percent. The proposal is also expected to reduce both volatile organic compounds (VOC) and toxic air contaminant (TAC) emissions and provide an essentially neutral nitrous oxide (NO_x) impact statewide.

If operators capture leak data at specified intervals—not continuously—the regulation suggests this will be sufficient for establishing compressors' emissions' footprints.

M-Squared Products & Services, Inc. manufactures the packing leak detector (PLD[®]), a technology offering inexpensive and accurate emissions' measurements with universal applicability. PLDs are an effective solution for large, reciprocating compressors' methane emission standards in addition to leak detection and repair (LDAR) for other large compressor components and smaller compressors.

Significantly, PLDs operate effectively with and can be retrofitted to any reciprocating compressor capacity.

In reciprocating compressors, emissions result from several possible functional failures. Until the PLD, emissions detection was less a precise science and largely anecdotal.

The evolution of Optical Gas Imaging (OGI) increases operator awareness of leakage, but doesn't provide volume or causal information. Additionally, OGI observations are static. PLDs operate continuously and isolate failure causal factors.

M-Squared Products & Services, Inc.

Features and benefits of a properly installed PLD

- First, real-time baseline indicator of packing gland and packing health. Determines whether packing material is appropriate, leaking, failing, installed correctly, the piston rod is too smooth or assembly is over-lubricated
- Visually indicates packing gland leaks
- Measures leak rates
- Calibrated for varying rates and different gases
- PLD outlets can be redirected for low-pressure gas applications until packing is serviced or replaced

Additionally, transducer-equipped PLDs

- Provide local and remote monitoring
- Coupled to V570 Programmable Logic Control (PLC) panels enable alarm and shutdown capabilities

PLDs are cost-effective tools which can help the California Environmental Protection Agency achieve emissions baselines for used or new compressors.

Of CARB's stated *objectives and benefits of the proposed regulatory action*, PLDs would find appropriate applications for provisions 2, 3, 4 and 7.

PLDs are the first, unique tools that provide real-time baselines helping operators assess the health & effectiveness of compressor packing. As operators install PLDs broadly, they will enjoy the following direct & indirect benefits:

- Cost effective alternative to determining packing life cycle
- Linear vs. random maintenance
- Capturing profit instead of lost production (when integrated with vapor recovery technologies)
- Flexibility (local & remote data monitoring & alarms)
- Compliance (the ultimate goal of emission regulations)

We appreciate the opportunity to contribute to this regulatory forum and would be delighted to provide Packing Leak Detector product and technical information.

Sincerely,



Jonathan D. Mann, President
M-Square Products & Services, Inc.

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