

**STATE OF NEW MEXICO
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD**

IN THE MATTER OF:

PROPOSED NEW REGULATION

20.2.50 Oil and Gas Sector — Ozone Precursor Pollutants

No. EIB 21-27(R)

**PRE-FILED TECHNICAL TESTIMONY OF MR. RAYMOND CARR,
A WITNESS ON BEHALF OF THE GAS COMPRESSOR ASSOCIATION**

I. Introduction to My Testimony

My name is Raymond Carr. I am testifying as a technical witness on behalf of The Gas Compressor Association (The GCA) in this proceeding. My testimony supports The GCA's proposed amendments to the New Mexico Environment Department's (Department) proposed regulations set out as 20.2.50.7 NMAC and 20.2.50.122 NMAC in the Department's proposed rule, 20.2.50 NMAC (Proposed Rule). The GCA's proposed amendments to these provisions are set forth in GCA Exhibit 3.

This testimony begins with an overview of my credentials. I will then go on to discuss the Department's proposed regulations concerning pneumatic controllers, specifically as proposed in 20.2.50.122 NMAC. I will then go on to describe The GCA's proposed amendments to the Proposed Rule related to pneumatic controllers, and will explain why these proposed amendments are necessary.

II. Statement of My Qualifications and Relevant Experience.

My resume is attached as GCA Exhibit 18. I received a Bachelor of Science degree from the University of Tulsa in engineering physics, with a specialization in electrical engineering, in May 1988. While in school, I worked as a student technician for the Tulsa University Artificial Lift Projects, a research consortium funded by major oil companies to research artificial lift

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1 methods for crude oil production. Since May 1988, I have been a registered Engineering Intern in
2 the State of Oklahoma.

3 I have been working for Frank W. Murphy Mfr. (later renamed FW Murphy Production
4 Controls) since May 1988. During my thirty-three year career at FW Murphy Production Controls
5 (FW Murphy), I have served as R&D Engineer, a Chief Engineer in the Automation Division, an
6 Engineering Supervisor of Corporate Sales, an Engineering Supervisor for Corporate
7 Development, a Sales Engineering Manager for FW Murphy's Southern Division in Rosenberg,
8 Texas, a Manager for Murphy Communications Solutions, a Manager Oil & Gas Market
9 Development, a Manager Technical Marketing Support, a Manager for Technical Services, a
10 Senior Engineer of Technical Services, a Manager of Technical Services, and an ASC Centurion
11 Integration Specialist.

12 During my tenure with FW Murphy, I have learned about all Murphy products and
13 applications, primarily in the oil and gas marketplace. My first experience with Murphy's scrubber
14 level products in the field and in manufacturing was in 1988. I have given technical and training
15 presentations at oil and gas industry trade shows and have taught the Instrumentation and Controls
16 section of the EGSA Rowley Schools of On-Site Power Generation. My experience makes me an
17 expert on FW Murphy Production Controls Scrubber Level Systems (SLS).

18 I am also familiar with pneumatic controllers and how they are used in the oil and gas
19 industry. A Pneumatic controller is a mechanical device designed to measure temperature,
20 pressure, or liquid level and transmit a pneumatic signal that will direct an event to occur – for
21 example, a controller will measure liquid level and then direct a valve to open when the measured
22 level reaches a pre-set point. Natural gas-driven pneumatic controllers are pneumatic controllers
23 powered by pressurized natural gas, and are commonly used in New Mexico oil and gas operations.

For purposes of my testimony, there are three basic categories of controllers: continuous bleed controllers, which have a continuous flow of natural gas to the process control device (and are further divided between high-bleed and low-bleed, depending on whether the bleed rate is greater or less than six standard cubic feet per hour (scfh)); intermittent controllers, which reduce emissions when compared to continuous-bleed controllers by performing a similar function while not experiencing continuous bleed or venting; and zero-emitting controllers, which are either electric or, if natural-gas driven, are closed-loop and release gas not to the atmosphere but back into a pipeline.

III. The New Mexico Environment Department's Proposed Regulations Concerning Pneumatic Controllers and Pumps and GCA's Proposed Amendments to Them

The Department's Proposed Rule includes regulations specifically applicable to pneumatic controllers and pumps. *See* Proposed Rule, 20.2.50.122 NMAC. The Department's Proposed Rule further includes pneumatic control emissions standards, which are set forth in proposed regulation 20.2.50.122.B(4) NMAC. The Department's proposed regulations concerning the emission standards for pneumatic controllers provide standards for new and existing natural gas-driven pneumatic controllers and pumps, but omits an important class of pneumatic controllers whose design align with the emissions reduction goals of the Department's Proposed Rule — snap-acting (intermittent bleed) pneumatic controllers. As set forth in GCA Exhibit 3, The GCA proposes specific amendments to the Department's Proposed Rule concerning pneumatic controllers in order to clarify, fully capture and appropriately regulate the types of pneumatic controllers and pumps that are subject to the Department's Proposed Rule. I will now discuss the amendments and the basis for adopting them.

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1 The GCA first suggests adding a definition of “intermittent pneumatic controllers” in
2 20.2.50.7 NMAC to clarify that such controllers are very different from continuous bleed
3 controllers. This clarification is needed to ensure that emission standards under the Department’s
4 Proposed Rule that are made applicable to continuous bleed controllers are not applied to
5 intermittent pneumatic controllers. Without the distinction, the beneficial use of intermittent
6 pneumatic controllers in the oil and gas industry would be discouraged rather than encouraged.
7 Intermittent pneumatic controllers are used widely in the oil and gas industry as a practical and
8 effective means of limiting emissions.

9 The GCA’s proposed amendments contemplate removing intermittent pneumatic
10 controllers from regulatory provisions applicable to continuous bleed controllers in 20.2.50.122
11 NMAC, and instead proposes combining them with non-emitting devices, based on the fact that
12 emissions are limited and often de minimus, as shown by the FW Murphy SLS (Scrubber Level
13 System) Gas Emissions Calculator Spreadsheet attached as GCA Exhibit 19. As background, FW
14 Murphy Production Controls product, LS200NDVO is an intermittent, low-bleed device. See FW
15 Murphy Liquid Level Switches (LS200 Series), attached as GCA Exhibit 20, and FW Murphy
16 Scrubber Level Control Systems, attached as GCA Exhibit 21. It qualifies as a low-bleed device
17 based on the traditional threshold of 6 SCFH that is used to determine whether a continuous-bleed
18 controller is high or low-bleed – though it has even lower emissions than a continuous, low-bleed
19 controller, due to its intermittent operation. See the Report on Oil and Natural Gas Sector
20 Pneumatic Devices, p. 41, by the U.S. EPA Office of Air Quality Planning and Standards, attached
21 as GCA Exhibit 22. The LS200NDVO has connections for the venting of gas to an available
22 Closed Vent System to further limit emissions. These types of devices should be exempted from
23 monitoring and recordkeeping requirements by language The GCA proposes in 20.2.50.122.C(1)

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1 and 20.2.50.122.D NMAC, and their use should be encouraged along with non-emitting
2 controllers, or where non-emitting controllers are not technically or economically feasible, by
3 language The GCA proposes in 20.2.50.122.B NMAC.

4 By emitting only during the actuation cycle, intermittent controllers represent a significant
5 reduction in emissions over traditional continuous-bleed pneumatic controllers, and the New
6 Mexico ozone precursor rule should be revised to recognize that environmental benefit and to
7 reward (and incentivize) their use. For that reason, the Department should treat intermittent
8 pneumatic controllers like non-emitting controllers in the Proposed Rule. As shown in GCA
9 Exhibit 3, The GCA has suggested changes that require owners or operators to maintain
10 information about the number and design of intermittent controllers in their controller database,
11 but otherwise exempt intermittent controllers from ongoing monitoring and maintenance
12 requirements that are unnecessary as applied to intermittent controllers.

13 Treating intermittent controllers like non-emitting controllers in the ozone precursor rule
14 makes sense from a technical standpoint. For example, the LS200NDVO intermittent controller
15 model mentioned above is factory calibrated for the application for which it is intended, and no
16 field adjustment should be necessary. The type of ongoing inspection, monitoring, and
17 maintenance program that would be employed for a traditional, continuous-bleed controller does
18 not serve the same purpose or provide the same benefits in the context of intermittent pneumatic
19 controllers. An intermittent controller, which has no activity or emissions outside of the actuation
20 cycle, will have nothing to inspect during the type of periodic inspection that one might conduct
21 for continuous-bleed controllers. Moreover, if some equipment component of the system has a
22 fugitive emissions leak, that leak will be subject to and captured by the fugitive emissions

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1 monitoring leak detection and repair (LDAR) program that is established elsewhere in the
2 Proposed Rule.

3 Finally, GCA proposes language changes to 20.2.50.122.C(1) NMAC to refer to a
4 controller's "emission rate" rather than it "bleed rate." This is because certain controllers that may
5 not have a bleed rate of zero, such as certain low-bleed controllers, can effectively have an
6 emission rate at or close to zero where the kind of Closed Vent System described above is
7 employed. Consistent with the Department's goals of limiting emissions, it makes sense to use
8 emission rates rather than bleed rates in the regulation of pneumatic controllers or pumps.

9 **Conclusion**

10 In conclusion, the amendments The GCA has proposed would encourage, rather than
11 discourage, the continued use of intermittent pneumatic controllers in the oil and gas industry. The
12 GCA's proposed amendments address the Proposed Rule's neglect of these types of pneumatic
13 controllers by offering a definition that explicitly recognizes intermittent pneumatic controllers in
14 the regulation and avoiding application of the emission standards that are applied to continuous
15 bleed controllers.

16 This concludes my direct technical testimony in this matter.