

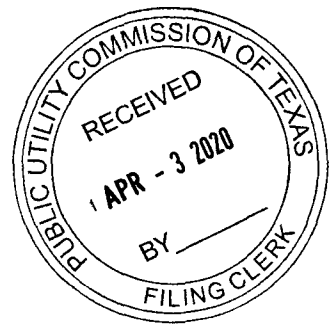


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**PUC DOCKET NO. 49795
SOAH DOCKET NO. 473-20-1118**

**COMPLAINT OF PETTY GROUP, LLP §
AGAINST RIO GRANDE ELECTRIC §
COOPERATIVE, INC. §**

**BEFORE THE
STATE OFFICE OF
ADMINISTRATIVE HEARINGS**

**DIRECT TESTIMONY
OF
GILBERT MARQUEZ JR.**

**ON BEHALF OF
PETTY GROUP, LLP**

April 3, 2020

**PUC DOCKET NO. 49795
SOAH DOCKET NO. 473-20-1118**

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Q. PLEASE STATE YOUR NAME, OCCUPATION AND ADDRESS.

A. My name is Gilbert Marquez Jr. I am a licensed air conditioning (“AC”) contractor. My business address is 323 South Oak Street, Pearsall, Texas 78061.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.

A. I have been installing and repairing commercial and residential AC systems since 1997. I operate Maverick Heat & Cool, Inc. (“Maverick”), an independent AC contracting business founded by my father, Gilbert Marquez Sr. I perform AC installation and repair work myself and also supervise a team of three AC technicians at Maverick.

Q. DO YOU HOLD ANY PROFESSIONAL LICENSES?

A. Yes, I hold an AC contractor license from the State of Texas.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?

A. I am testifying on behalf of Petty Group, LLP (“Petty”).

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A. Yes.

Q. WHAT IS YOUR RELATIONSHIP TO THE PETTY RANCH?

A. Petty hired Maverick to install and repair the AC systems in a hunting lodge at the Petty Ranch, most recently in 2016 and 2018. MC Builders, a general construction contractor,

1 also hired Maverick to install AC systems for four new residences that MC Builders
2 constructed at the Petty Ranch.

3 **II. DESCRIPTION OF MAVERICK'S WORK AND**
4 **CONCLUSIONS REGARDING THE PETTY RANCH**

5 **Q. WHEN DID MAVERICK LAST REPAIR THE AC SYSTEM AT THE HUNTING**
6 **LODGE ON THE PETTY RANCH?**

7 **A.** We last repaired the primary AC system at the lodge in December 2018.

8 **Q. WHAT WAS PETTY'S CONCERN ABOUT THE PRIMARY AC SYSTEM?**

9 **A.** Petty was concerned that the system was not cooling properly.

10 **Q. PLEASE DESCRIBE THE WORK MAVERICK PERFORMED ON THE LODGE**
11 **AC SYSTEM.**

12 **A.** When we are called out because an AC system is not working properly, we check all the
13 system wiring, refrigerant levels, filters, thermostat mode functions, power source to the
14 compressor, drain lines, and other items that might explain the malfunction. We
15 performed these checks on the hunting lodge's AC system in December 2018 and
16 determined that the capacitor and starter controls were not working. We replaced each of
17 those with new components and got the system cooling properly again.

18 **Q. DID MAVERICK MAKE REPAIRS FOR ANY OTHER COOLING EQUIPMENT**
19 **AT THE LODGE?**

20 **A.** Yes. The lodge also has a small mini-split AC system that serves the kitchen. Maverick
21 was called to repair the mini-split AC in April 2019 because it was not cooling properly.
22 According to the testimony of Mr. Kyle Haley, the split failed in early 2019 before the
23 ranch was disconnected from the grid in March 2019. When we were called in April
24 2019, we were able to reset it to get it working again, but it would only function
25 temporarily, for a few hours, before needing to be reset again. We recommended that the
26 system be replaced because its internal components were damaged and it could not be

1 repaired to the point that it would function normally. We ultimately replaced the mini-
2 split unit.

3 **Q. WHAT DO YOU BELIEVE DAMAGED THE MINI-SPLIT AND THE PRIMARY**
4 **AC SYSTEM COMPONENTS?**

5 **A.** The most likely explanation is that these systems were drawing dirty power from the
6 utility system that caused overheating and breakdown of their components.

7 **Q. WHAT LED YOU TO THIS CONCLUSION?**

8 **A.** There are several factors that led me to conclude poor quality power from Rio Grande
9 Electric Cooperative's ("RGEC's" or the "Cooperative's") system damaged Petty's
10 hunting lodge's AC systems. First, the mini-split AC system is designed to provide an
11 error code to help troubleshoot any problems. When we checked Petty's kitchen mini-
12 split in April 2019, the unit displayed the error code for a bad electrical filter in excess of
13 harmonic limits, which indicates it had experienced a problem with the quality of the
14 unit's power supply at some point. This also indicated the power supply problem could
15 have damaged the unit, causing its parts to break down prematurely.

16 The repeated, unexplained malfunctions that the primary lodge AC system
17 experienced were another indication that dirty power supply was to blame. Maverick
18 replaced the capacitor and starting components to the AC compressor in June 2016, then
19 installed an entirely new compressor in August 2016, and finally replaced the new
20 compressor's capacitor and starting components in December 2018. Each time, we could
21 find no problems with the system other than the failure of these components. It is highly
22 unusual for AC system components to fail so quickly after their installation, and the fact
23 that they did so repeatedly indicated to me that a manufacturing defect was unlikely. Poor
24 quality power can cause the premature breakdown of AC systems consistent with what

25 we saw with the hunting lodge's AC. I also had reason to suspect that the Petty Ranch

1 was receiving poor quality power following our experience installing the AC systems for
2 the new residences, which displayed unusual malfunctions when connected to RGECE's
3 system.

4 **Q. PLEASE DESCRIBE THE AC SYSTEMS YOU INSTALLED FOR THE NEW**
5 **RESIDENCES AT THE PETTY RANCH.**

6 **A.** We installed split-system ACs that have an indoor evaporator and an outdoor
7 condenser/compressor. Petty wanted to be able to set different cooling temperatures for
8 different rooms within the residences, so we installed two zoned AC systems for each
9 residence.

10 **Q. WAS THE EQUIPMENT MAVERICK INSTALLED TYPICAL OF A**
11 **RESIDENTIAL AC SYSTEM?**

12 **A.** Yes, it is a system we recommended to Petty that is typically used for residential
13 installations where the homeowner wants to have different climate zones within the
14 house.

15 **Q. WHAT PROBLEMS DID YOU EXPERIENCE WITH THE AC SYSTEMS**
16 **MAVERICK INSTALLED FOR THE NEW RESIDENCES AT THE PETTY**
17 **RANCH?**

18 **A.** When the electricians hooked up the first of the residences to the utility power supply,
19 some of the AC systems' components were not operating properly. The indoor portion of
20 the system or the outdoor portion of the system would work, but not both. When we reset
21 the system, the problem would reoccur but not in the same way—if the indoor portion of
22 the system was previously working, it would now be non-functional, and the outdoor
23 portion would now be working. You cannot create cooling unless both the indoor and
24 outdoor portions of a split-system AC are working, so this was a significant problem. We
25 also noticed several times that after we reset one of the two AC systems for the new

1 residence and it was functioning as intended, the other AC system would then stop
2 working.

3 **Q. WHAT DID YOU DO TO DIAGNOSE THE PROBLEM?**

4 **A.** We reset the AC systems many times over several days. We went back over our
5 installations to check the wiring and troubleshoot all of the components but we could not
6 find anything that might be causing the problems. After a second new residence was
7 hooked up to utility power supply, it displayed the same issues. We had never
8 experienced anything like this, and reached out to the electrician that was working on the
9 new residences, Nathan Morgan with MC Electric, to see if he had any insight.

10 **Q. WHAT DID YOU LEARN FROM MR. MORGAN?**

11 **A.** Mr. Morgan told us he was having problems getting the LED lighting fixtures to work in
12 the new residences and could not identify the cause of the problem. He suggested that we
13 hook the residences up to a generator to see if that would make any difference.

14 **Q. WHY WOULD CONNECTING THE RESIDENCES TO A GENERATOR HELP?**

15 **A.** I am not an electrician but my understanding from working with AC systems is that if the
16 electric power supply to the AC unit does not meet certain quality standards, for example
17 if there is too much harmonic distortion in the power flow, that power can damage the AC
18 unit or cause it to malfunction. Connecting the residences to a generator would help
19 determine whether the power source was causing the problems we saw in the Petty AC
20 systems.

21 **Q. DID MC ELECTRIC SWITCH THE RESIDENCES FROM UTILITY POWER TO**
22 **GENERATOR POWER AFTER YOUR DISCUSSION WITH MR. MORGAN?**

23 **A.** Yes, they did.

1 **Q. WHAT IMPACT DID THE SWITCH TO GENERATOR POWER HAVE ON THE**
2 **AC SYSTEMS MAVERICK HAD INSTALLED IN THE RESIDENCES?**

3 **A.** The AC systems all functioned correctly immediately after being removed from RGEC's
4 power and switched to a generator. While on the generator, the AC systems did not
5 experience any of the problems we had seen when we first started them up, when they
6 were receiving power from RGEC. We have returned to the Petty Ranch several times
7 since installing these systems, during times when we understood from conversations with
8 Petty's foreman that the residences were still running on generator power, and verified
9 that the AC systems continued to work normally.

10 **Q. WHAT DID YOU CONCLUDE REGARDING THE PROBLEMS YOU SAW IN**
11 **THE AC SYSTEMS AT THE PETTY RANCH?**

12 **A.** I concluded that the problems with the AC units in the hunting lodge in 2016, 2018, and
13 2019 and the problems with the AC units installed in the new residences in 2019 were
14 caused by bad quality power coming in from the utility system. My understanding from
15 discussing these issues with Mr. Morgan is that RGEC's power supply had excessive
16 harmonic distortion. This harmonic distortion can cause AC systems to malfunction and
17 can damage AC components. I concluded that Petty would need to stay on the generator
18 power to keep the AC units working reliably while RGEC's power displays excessive
19 harmonics.

20 **Q. COULD YOU INSTALL ANY EQUIPMENT TO PROTECT THE AC SYSTEMS**
21 **DURING PERIODS OF EXCESSIVE HARMONICS OR OTHER ABNORMAL**
22 **ELECTRIC SERVICE CONDITIONS?**

23 **A.** I am not aware of any AC equipment that would protect from excessive harmonics in an
24 AC unit's power supply.

25 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

26 **A.** Yes.25349632v.3

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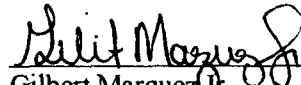
25 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

26 **A.** Yes.25349632v.3

VERIFICATION

Gilbert Marquez Jr., swearing under penalty of perjury, states:

I am the witness identified in the preceding testimony. I have read the testimony and am familiar with the contents. Based upon my personal knowledge, I affirm that the facts stated in the testimony are true and correct to the best of my knowledge. In addition, in my judgment and based upon my professional experience, the opinions and conclusions stated in the testimony are true, valid, and accurate.



Gilbert Marquez Jr.

Date: 03-31-2020