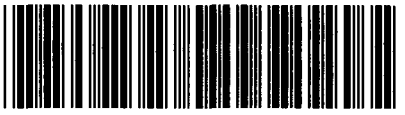

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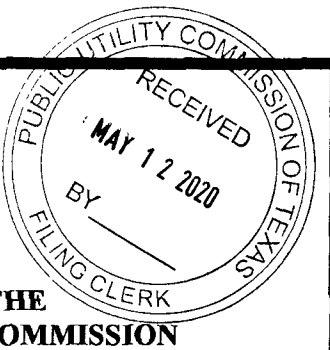

DOCKET NO. 49795
SOAH DOCKET NO. 473-20-1118

COMPLAINT OF PETTY GROUP, LLP	§	**BEFORE THE**
AGAINST RIO GRANDE ELECTRIC	§	**PUBLIC UTILITY COMMISSION**
COOPERATIVE, INC.	§	**OF TEXAS**

DIRECT TESTIMONY

OF

DANNY WELLS, P.E.

ON BEHALF OF

RIO GRANDE ELECTRIC COOPERATIVE

MAY 2020

116

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

COMPLAINT OF PETTY GROUP, LLP	§	**BEFORE THE**
AGAINST RIO GRANDE ELECTRIC	§	**PUBLIC UTILITY COMMISSION**
COOPERATIVE, INC.	§	**OF TEXAS**

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DIRECT TESTIMONY OF DANNY WELLS

I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Daniel (Danny) W. Wells. Legacy Consultants 220 Livingston Drive Hickory Creek, TX 75065

Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. Legacy Consultants. I am the owner/CEO of the company as well as a professional engineer.

Q3. ON WHOSE BEHALF ARE YOU FILING THIS DIRECT TESTIMONY?

A. Rio Grande Electric Cooperative, Inc. (RGEC).

II. QUALIFICATIONS

Q4. PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS.

A. I have a Bachelor of Science degree in Electrical Engineering (BSEE). I have my professional engineering (PE) license in 10 different states as well as the country of Zambia. Additional information regarding my education, qualifications and background can be found in my professional bio attached hereto as Exhibit DW-1.

Q5. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. I have not previously testified before the Commission.

Q6. WAS THIS TESTIMONY WRITTEN UNDER YOUR SUPERVISION AND CONTROL?

A. Yes.

III. PURPOSE OF TESTIMONY

Q7. PLEASE STATE THE PURPOSE OF YOUR TESTIMONY.

A. My testimony will address the following issues in the Commission's Preliminary Order:

- What facts led Petty to conclude that Rio Grande was the source of excessive harmonics? What methods did Petty use to identify the source of the excessive harmonics? Do the methods used comport with applicable engineering practices and standards? (Issue 7)
- What facts led Rio Grande to conclude that Petty was the source of excessive harmonics? If Petty was the source of excessive harmonics, what actions are required of Petty to address this issue? If Petty was the source of excessive harmonics, what actions, if any, are required of Rio Grande to address this issue? (Issue 8)

Q8. WOULD YOU PLEASE SUMMARIZE THE FACTS AND CONCLUSIONS THAT RESULTED FROM YOUR REVIEW AND ANALYSIS?

A. Yes. As will be discussed in greater detail below, the following facts and conclusions summarize the results of my review and analysis:

- The damage to Petty's equipment could have been caused by many other sources other than harmonics. (Issue 7).
- Petty's methodology in determining the cause of its electrical issues failed to rule out many of the other potential causes. (Issue 7).
- Based on the failure to preserve any of the damaged equipment, it is impossible to determine whether harmonics, or any other issue, caused the damage. (Issue 8).
- Rio Grande acted more than reasonably in response to Petty's complaints regarding electric service. (Issue 8).

Q9. WHAT IS YOUR UNDERSTANDING OF THE FACTS THAT LED PETTY TO CONCLUDE THAT RIO GRANDE WAS THE SOURCE OF EXCESSIVE HARMONICS AND THE METHODS USED TO IDENTIFY THE SOURCE?

A. From review of multiple testimonies being provided on behalf of Petty Group, the original suggestion of harmonics being caused by RGEC was made by the electrician Nathan Morgan in February 2019. Mr. Morgan suggested there were power problems to the HVAC contractor Gilbert Marquez Jr. when problems with the AC at one of the Casitas was discovered. Neither of these gentlemen had ever dealt with harmonics issues in their numerous years of experience in their respective fields. Mr. Marquez's testimony reaches beyond the date testified by Mr. Morgan to include several issues with AC units, ice machines and walk-in freezer repairs that were completed in 2018. Mr. Morgan testified

that he had issues with LED lighting and had reached out to RGEC who he described acted responsibly and reasonably to his issue when RGEC changed out the transformer at the Petty Ranch. Mr. Morgan further tried to troubleshoot the electrical issues he was having by asking many fellow electricians and engineers that had no solutions for his electrical issues. Mr. Morgan testified that in February 2019 he borrowed a friend's Fluke 435-II power Quality and Energy Analyzer meter to check for harmonic distortion. Mr. Morgan testified in his 12,000 plus hours of electrician work he had never dealt with harmonics or ever used this type of meter before. Mr. Morgan attempted to understand the data by googling it, but eventually shared the data with Grubb Engineering. Grubb Engineering, who has worked for Petty Group before, is hired to look at the possible harmonic issues, though Grubb Engineering had never worked a job dealing with harmonics. Expert for Petty Group, Robert Grubb (Sr) testified that his report is based on work that his son Bobby Grubb (Jr) had completed. Bobby Grubb (Jr) is not an engineer but instead an Electrical Test Technician 3. Fluke meters were set by Bobby on April 29, 2019 while Petty was being powered by a generator. It is with these meters that Grubb engineering determined that there was excessive harmonics at the Petty Ranch. These methods used comport with applicable engineering standards if the individual doing the testing and/or reading of the data understands what they are looking at and how IEEE 519 applies.

Q10. WHAT IS YOUR UNDERSTANDING OF THE EQUIPMENT PETTY GROUP CLAIMS WAS DAMAGED IN THIS CASE?

A. I understand the damaged equipment to be AC units, ice makers, and a walk-in freezer. The complete list that was provided in the testimony of Kyle Haley is attached here as Exhibit DW-2.

Q11. WHAT STEPS WOULD YOU NEED TO TAKE TO DETERMINE THE CAUSE OF DAMAGE TO CLAIMED DAMAGED EQUIPMENT?

A. Inspection of the damaged units. This would involve a possible destructive lab examination that would include disassembly of the equipment. The lab examination would include x-rays as needed, circuit tracing, inspection of the wiring and circuit boards within the equipment for any type of damage and/or heating effects. If failed components are found within the equipment additional testing involving CT scans could be necessary to understand if there is a manufacturing defect within the equipment. X-rays of circuit boards

would allow determination of localized heating and or failure that occurred on the board. Comparing any failed parts to a manufactured provided circuit diagram would allow a greater understanding of what may have occurred. Lab examinations are very fluid in nature with the various steps to take next being determined after disassembly of the equipment and depending on what is found.

Q12. ARE YOU ABLE TO DETERMINE THE CAUSE OF THE DAMAGE IN THIS CASE? WHY OR WHY NOT?

A. Cause of damage could not be determined with any of the claimed damaged equipment. Cause could not be determined because none of the damaged equipment was retained by the Petty Group employees or its contractors to allow the procedures outlined in Q11 to be performed. Multiple testifying witnesses for Petty Group testified that none of the damage equipment was retained or pictures taken of the damage.

Q13. WHAT OTHER THINGS CAN CAUSE THE ELECTRICAL ISSUES DESCRIBED BY PETTY GROUP?

A. Lightning strikes, including strikes that occur prior to the day the equipment stops working. Rodent damage, incorrect attachment of electrical wires or parts. Shorted wires leading to other failures in the equipment. Normal "wear & tear" of the unit. Age of the equipment leads to more frequent failures within the equipment as it reaches its expected life span. Texas heat can add to the shortened life of some equipment such as capacitors on some of the equipment.

Q14. ARE YOU ABLE TO RULE OUT ANY OF THOSE OTHER CAUSES?

A. I am not, as the equipment was not retained for any type of examination as discussed in Q10.

Q15. DO THE METHODS PETTY USED COMPORT WITH APPLICABLE ENGINEERING PRACTICES AND STANDARDS?

A. Some of the methods used by experts of Petty appeared to begin with a scientific method approach, but stop short of fully utilizing the method. The scientific method should be applied to every aspect of the investigation. These are the steps of the scientific method:

1) Recognize the need
2) Define the problem

3) Collect data

4) Analyze the data

5) Develop a hypothesis

6) Test the hypothesis

7) Select final hypothesis

Other Petty experts seemed to approach the analysis with more of an expectation bias and continued to try to prove only their theories correct as opposed to doing a full analysis of the issues. Part of the collection of data, step 3 above, should have included collection of the damaged equipment and photographing the evidence in place prior to removal and retention. This and many other steps of inspection were not taken by Petty experts as outlined in Q11. Another example of non-engineering practice and standards would be the report produced by Robert Grubb Sr. for work that he did not complete or appeared qualified to do himself. Instead the work was completed by Mr. Grubb's non-engineering son, Bobby Grubb Jr., and signed and sealed by Mr. Grubb Sr. This is typically referred to as "rubber stamping" the engineering report with a Professional Engineering (PE) title and seal to give more weight to the report and or testimony. As a whole most of the methods used by Petty did not comport with engineering practice and standards.

Q16. HAVE YOU WORKED WITH OTHER UTILITIES IN DETERMINING THE CAUSE OF ELECTRICAL ISSUES?

A. I have. I have worked directly as an employee for two separate investor owned utilities in Missouri. I have also worked cases/files involving electric issues from utilities in multiple states that resulted in property damage, structure fires, wildland fires, shocks and electrocutions. My work with these various electrical issues has included working on behalf of the utilities as well as working opposing various utilities.

Q17. BASED ON THE RGEC TIMELINE, DID RGEC ACT REASONABLY IN ASSESSING THE ELECTRICAL ISSUES IN THIS CASE?

A. While turning on a light typically includes the simple action of flipping a switch, the determining of electrical issues on a utility system involves many more variables and therefore much more complex. The reasonableness of assessing and addressing issues by utilities is typically compared to practices of other utilities and referred to as "standard

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utility practice" or simply "utility practice". In all of my work with utilities (directly and case related) I have never found a company that has been as proactive as RGEC in dealing with electrical issues (specifically harmonics). The standard utility practice for dealing with most electrical issues is a "reactive approach" and usually only after repeated complaints. Granted a utility must know there is a problem before they can address it. That's why the forming of the harmonic task force in September of 2018 as well as hiring multiple consultants to understand any harmonics issues on the RGEC system even before the task force was established, is a standard by which other utilities should look to for dealing with common electrical issues. RGEC included in this effort the monitoring of new customer loads to see if harmonics were being introduced on their system. This type of proactive approach is nearly un-heard of in the industry for ensuring IEEE 519 compliance. Further, the willingness to disconnect customers who are creating issues on the system, shows the seriousness of RGEC in providing its members good reliable power and service. A more detailed look of the timeline of events, since May 2018 on the Brundage feed 301-01, is attached as Exhibit DW-3. Finally, another factor that led me to conclude that RGEC acted reasonably is that Petty's own experts, including Nathan Morgan and Robert Grubb, both stated that RGEC acted reasonably in response to the complaints regarding electricity. The relevant portions of their testimony are attached as Exhibit DW-4.

IV. CONCLUSION

Q18. DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

A. Yes. However, I request the right to amend, delete, and/or add to my testimony if additional information or facts become known.

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Danny Wells
Electrical Engineer, Senior Consultant
danny@wellslegacyconsultants.com

Haag Engineering, Dallas, TX – November 2008 – January 2012
Forensic Electrical Engineer

Investigations performed included, but were not limited to, electrical failures (transformers, switchgear, commercial equipment, appliances, ground issues, vehicle and machinery), electrocution/electric shock evaluations, lightning damage, electrical causes of fires in residential & commercial properties, electronic & computer failure (internal breakdown, surge damage, reparability), evaluation and scope of damage, and research & testing of various components

Kansas City Power & Light, Kansas City, MO – 2006 - 2008
Project Engineer, Distribution and Standards

Full Faith Outreach Ministries Inc., Lusaka, Zambia-Africa – 2001 – 2006
Director/Founder/Consultant

Empire District Electric Company, Joplin, MO – 1996 - 2001
Distribution, Transmission & Substation Design Engineer

Franklin Technology Center, Joplin, MO – 1997
Department Head/Inst

CONTINUING EDUCATION (INSTRUCTOR):

- "Fire and Explosion: Origin and Cause," Dallas, TX
  November 2011

- "Fire Origin and Cause," San Antonio, TX
  Eberl Claim Service Annual Meeting, February 2010

- "Ask the Expert Seminar," DFW area, TX
  Multiple dates, January 2010 – January 2012

CONTINUING EDUCATION (ATTENDED):

- "Fire and Electrical Analysis," Austin, TX
  Central Texas Fire Investigators Association (CTFIA), December 2008

- "Certified Fire and Explosion Investigator Seminar," Denver, CO
  National Association of Fire Investigators (NAFI), March 2009

- "Testifying and Forensic Report Writing," Dallas, TX
  SEAK Inc., June 2009

- "Certified Vehicle Fire Investigator Seminar," Lexington, KY
  National Association of Fire Investigation (NAFI), September 2009

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Danny Wells
Electrical Engineer, Senior Consultant
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- "Advanced Arson Investigative Techniques," Brunswick, GA
  I.A.A.I., November 2010

- "Advanced Testifying and Forensic Report Writing," Dallas, TX
  SEAK Inc., December 2010

- The following seminars were completed:
  Red Vector Online, 2008 – 2012
  "Arc Flash Hazard Analysis"
  "Personal Protective Equipment"
  "Capacitor Applications"
  "Electric Motors & Generators (Magnetics/Generators/Alternators)"
  "Electrical Characteristics of Conductors"
  "Fuel Cell Power Systems"
  "Voltage Regulator Application"
  "Electrical Conductor Sizing"
  "Overview of Electric Power Systems"
  "Telecommunications Fundamentals"
  "Electrical Protection Grounding"
- The following seminars were completed (continued):
  Red Vector Online, 2008 – 2012
  "Electric Power Course"
  "Transformer Standards"
  "Solar Electric Generation"
  "NEC 2008 Changes"
  "Safety: Electrical – Fundamentals, Materials & Equipment Grounding"
  "Electrical Installations"
  "Transformer Connections"
  "Ethical Decision Making for Engineers"
  "Solar Electric Generation Technologies"