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September 17, 2013

Mr. Jeff Derouen
Executive Director
Public Service Commission
P.O. Box 615
Frankfort, KY 40602

Re: Case No. 2013-00158
South Kentucky Rural Electric Cooperative Corporation's Alleged Failure
to Comply with KRS 278.042

Dear Mr. Derouen:

Attached hereto is the Stipulation of Facts and Settlement Agreement entered into by South Kentucky Rural Electric Cooperative Corporation and Commission Staff. Please bring this document to the Commission's attention for its review and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "AAC", written over a horizontal line.

Aaron Ann Cole
Staff Attorney

Enclosure

cc: Parties of Record

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED
SEP 17 2013
PUBLIC SERVICE
COMMISSION

In the Matter of:

SOUTH KENTUCKY RECC)
_____))
ALLEGED FAILURE TO COMPLY WITH KRS) CASE NO.
278.042) 2013-00158
))
))

STIPULATION OF FACTS AND SETTLEMENT AGREEMENT

By Order dated May 6, 2013, the Commission initiated this proceeding to determine whether South Kentucky Rural Electric Cooperative Corporation ("SKRECC") should be subject to the penalties prescribed in KRS 278.990 for multiple probable violations of KRS 278.042, which requires an electric utility to construct and maintain its plant and facilities in accordance with accepted engineering practices as set forth in the Commission's administrative regulations and orders and in the most recent edition of the National Electrical Safety Code ("NESC"), and for multiple probable violations of SKRECC's safety manual.¹ SKRECC was given 20 days to file a response to the show cause Order and an informal conference was scheduled at the Commission's offices on June 27, 2013.

The seventeen alleged violations of the NESC and SKRECC's safety manual, as cited by the Commission's May 6, 2013 Order, can be structured into four areas:

1. Failure to perform preliminary inspection to determine existing condition of lines.

¹ SKRECC recognizes the American Public Power Association ("APPA") Safety Manual, 14th Edition (2008) as its adopted safety manual.

- a. NESC Section 42, Rule 420.D – General Rules for Employees – Energized or Unknown Conditions – Employees shall consider electric supply equipment and lines to be energized, unless they are positively known to be de-energized. Before starting work, employees shall perform preliminary inspections or tests to determine existing conditions. Operating voltage of equipment and lines should be known before working on or in the vicinity of energized parts.
- b. NESC Section 42, Rule 422.C.5 – General Rules for Employees – Installing and Removing Wires or Cables – Employees working on or in the vicinity of equipment or lines exposed to voltages higher than those guarded against by safety appliances provided shall take steps to be assured that the equipment or lines on which the employees are working are free from dangerous leakage or induction or have been effectively grounded.
- c. NESC Section 44, Rule 443.A.1.a, 1.b – Additional Rules for Supply Employees – Work on Energized Lines and Equipment – A. General Requirements – 1. When working on energized lines and equipment, one of the following safeguards shall be applied: a. Insulate employee from energized parts; b. Isolate or insulate the employee from ground and grounded structures, and potentials other than the one being worked on.
- d. NESC Section 44, Rule 443.A.3 -- Additional Rules for Supply Employees – Work on Energized Lines and Equipment – General Requirements – All employees working on or in the vicinity of lines or equipment exposed to

voltage higher than those guarded against by the safety protective equipment provided shall assure themselves that the equipment or lines on which they are working are free from dangerous leakage or induction, or have been effectively grounded.

- e. APPA Safety Manual, Section 202.1 – Control of Hazardous Energy/ Lockout-Tagout – Includes employees authorized to work on Utility System. a) Safety -- 1) Safety must be the first consideration. All safety rules of the company plus the APPA Safety Manual must be known and followed by each employee. Employees are expected to use judgment, common sense, and diligence in following these rules. Visually inspect all equipment for damage and identify possible problems before starting work or switching. Lines, cables, stations, or equipment are considered de-energized and ready for work only after the equipment has been identified and isolated, a clearance has been issued, and the equipment has been tested and grounded.
- f. APPA Safety Manual, Section 507.8 – Work on Transformers – a) The primary leads of a distribution transformer shall be considered energized at full voltage until both the primary and secondary leads have been disconnected or it has been definitely determined that the secondary circuit to which it is attached is grounded. b) The cases of all transformers connected to a source of supply shall be considered as being energized at the full primary voltage unless they are adequately grounded.

- g. APPA Safety Manual, Section 507.13 – Grounding – General – a) All previously energized conductors shall be considered energized until tested and properly grounded. f) Grounding – Equal potential grounding is required whenever possible. When equal potential grounding is not possible, dual point grounding (bracket grounding) is acceptable. (1) Equal potential grounding is required when workers are working on or in close proximity to a structure, whether working from the structure (climbing) or from an aerial device.
2. Failure to take proper safeguarding precautions in vicinity of energized lines by employees and person in charge.
- a. NESC Section 42, Rule 420.C.4 – General Rules for Employees – Safeguarding Oneself and Others -- Employees who work on or in the vicinity of energized lines shall consider all of the effects of their actions, taking into account their own safety as well as the safety of other employees on the job site, or on some other part of the affected electric system, the property of others, and the public in general.
 - b. NESC Section 42, Rule 421.A – General Rules for Employees – General Operating Routines – Duties of a First-Level Supervisor or Person in Charge – This individual shall:
 - 1. Adopt such precautions as are within the individual's authority to prevent accidents.
 - 2. See that the safety rules and operating procedures are observed by the employees under the direction of this individual.
 - 3. Make all necessary records and reports, as required.
 - 4. Prevent unauthorized persons from approaching places where work is

being done, as far as practical. 5. Prohibit the use of tools or devices unsuited to the work at hand or that have not been tested or inspected as required. 6. Conduct a job briefing with the employees involved before beginning each job. A job briefing should include at least the following items: work procedures, personal protective equipment requirements, energy source controls, hazards associated with the job, and special precautions.

- c. APPA Safety Manual, Section 102 – Employee’s Responsibility for Safety
 - a) Before beginning a job, employees shall satisfy themselves that they can perform the task without injury. If they are in doubt as to their ability to perform the work, they shall call this to the attention of their Supervisor. b) Before starting a job, employees shall thoroughly understand the work to be done, their part in the work, and the safety rules that apply.

3. Failure to observe minimum approach distance (“MAD”) requirements.

- a. NESC Section 44, Rule 441.A.1.a-c, 3.a, 3.b(1)-(2) – Energized Conductors or Parts – Employees shall not approach (within the reach or extended reach), or knowingly permit others to approach, any exposed ungrounded part normally energized except as permitted by this rule. A. Minimum Approach Distance to Energized Lines or Parts 1. General – Employees shall not approach or bring any conductive object within the minimum approach distance listed in Table 441-1 or Table 441-4 or distances as determined by an engineering analysis to exposed parts unless one of the following is met: a. The line or part is de-energized and

grounded per Rule 444D. b. The employee is insulated from the energized line or part. Electrical protective equipment insulated for the voltage involved, such as tools, gloves, rubber gloves, or rubber gloves with sleeves, shall be considered effective insulation for the employee from the energized line or part being worked on. c. The energized line or part is insulated from the employee and from any other line or part at a different voltage. – 3. Precautions for Approach Voltages from 301 V to 72.5 kV – At voltages from 301 V to 72.5 kV, employees shall be protected from phase-to-phase and phase-to-ground differences in voltage. See Table 441-1 for the minimum approach distances to live parts. a. When exposed ground lines, conductors, or parts are in the work area, they shall be guarded or insulated. b. When the Rubber Glove Work Method is employed, rubber insulating gloves, insulated for maximum use voltage as listed in Table 441-4, shall be worn whenever employees are within the reach or extended reach of the minimum approach distances listed in Table 441-1, supplemented by one of the following two protective methods: (1) The employee shall wear rubber insulating sleeves, insulated for the maximum use voltage as listed in Table 441-4, in addition to the rubber insulating gloves. EXCEPTION: When work is performed on electric supply equipment energized at 750 V or less, rubber sleeves are not required if only the live parts being worked on are exposed. (2) All exposed energized lines or parts, other than those temporarily exposed to perform work and maintained under positive control, located within the

reach or extended reach of the employee's work position, shall be covered with insulating protective equipment. EXCEPTION: When work is being performed on parts energized between 300 V and 750 V within enclosed spaces (e.g. control panels and relay cabinets), insulating or guarding of all exposed guard lines, conductors, or parts in the work area is not required provided that employees use insulated tools and/or gloves and that exposed grounded lines, conductors, or parts are covered to the extent feasible.

- b. APPA Safety Manual, Section 507.1 – Working at or Near Exposed Energized Lines and Equipment – f) No employee may approach or take any conductive object without an insulating handle closer to exposed energized parts than the minimum approach distances set forth in Tables 5.2 through 5.6 unless the employee is insulated from the energized part of the energized part is insulated from the employee and any other conductive object at a different potential, or the employee is insulated from any other conductive object, as during live –line bare-hand work. Refer to Paragraphs 507.2, 507.5, 507.8, and 509.5 for related information. Refer to OSHA Standard 29 CFR 1910.137.
- c. APPA Safety Manual, Section 509.3 – Work on Energized Cables – c) No employee may approach or take any conductive object without an insulating handle closer to exposed energized parts than the clearances set forth in Tables 5.2 through 5.6 unless the employee is insulated from the energized part or the energized part is insulated from any other

conductive object, as during live-line bare-hand work. Refer to Paragraphs 507.2, 507.5, 507.8, and 509.5 for related information. Refer to OSHA Standard 29 CFR 1910.137.

4. Failure to properly utilize personal protective equipment (“PPE”).

- a. NESC Section 42, Rule 420.H – General Rules for Employees – Tools and Protective Equipment – Employees shall use the personal protective equipment, the protective devices, and the special tools provided for their work. Before starting work, these devices and tools shall be carefully inspected to make sure that they are in good condition.
- b. NESC Section 44, Rule 441.A.1.b, 3.b(1)-(2) – Energized Conductors or Parts – Employees shall not approach (within the reach or extended reach), or knowingly permit others to approach, any exposed ungrounded part normally energized except as permitted by this rule. A. Minimum Approach Distance to Energized Lines or Parts 1. General – Employees shall not approach or bring any conductive object within the minimum approach distance listed in Table 441-1 or Table 441-4 or distances as determined by an engineering analysis to exposed parts unless one of the following is met: b. The employee is insulated from the energized line or part. Electrical protective equipment insulated for the voltage involved, such as tools, gloves, rubber gloves, or rubber gloves with sleeves, shall be considered effective insulation for the employee from the energized line or part being worked on. – 3. Precautions for Approach Voltages from 301 V to 72.5 kV – At voltages from 301 V to 72.5 kV, employees shall be

protected from phase-to-phase and phase-to-ground differences in voltage. See Table 441-1 for the minimum approach distances to live parts. b. When the Rubber Glove Work Method is employed, rubber insulating gloves, insulated for maximum use voltage as listed in Table 441-4, shall be worn whenever employees are within the reach or extended reach of the minimum approach distances listed in Table 441-1, supplemented by one of the following two protective methods: (1) The employee shall wear rubber insulating sleeves, insulated for the maximum use voltage as listed in Table 441-4, in addition to the rubber insulating gloves. EXCEPTION: When work is performed on electric supply equipment energized at 750 V or less, rubber sleeves are not required if only the live parts being worked on are exposed. (2) All exposed energized lines or parts, other than those temporarily exposed to perform work and maintained under positive control, located within the reach or extended reach of the employee's work position, shall be covered with insulating protective equipment. EXCEPTION: When work is being performed on parts energized between 300 V and 750 V within enclosed spaces (e.g. control panels and relay cabinets), insulating or guarding of all exposed guard lines, conductors, or parts in the work area is not required provided that employees use insulated tools and/or gloves and that exposed grounded lines, conductors, or parts are covered to the extent feasible.

- c. NESC Section 44, Rule 443.A.6 – Work on Energized Lines and Equipment – A. General Requirements – 6. Equipment or material of a noninsulating substance that is not bonded to an effective ground and which extends into an energized area, and which could approach energized equipment closer than the distance specified in Rule 441A, shall be treated as though it is energized at the same voltage as the line or equipment to which it is exposed.
- d. APPA Safety Manual, Section 401 – Personal Protective Equipment (PPE)
 - a) All employees shall be equipped with the appropriate PPE necessary to safely perform their jobs. The employer shall ensure that a preliminary assessment of work operations is performed to adequately evaluate the hazards and select suitable PPE for the employees. Any time PPE is worn, a job hazards analysis (JHA) should be completed prior to starting work.
 - b) Before any employee is assigned to a new article of PPE to use during the course of their job, training should be conducted to instruct the employee on the use, care, inspection, and maintenance of the PPE.
- e. APPA Safety Manual, Section 406 – Use and Care of Rubber Gloves – c) Rubber gloves are recommended to be worn while working on any pole or other structure on which energized lines or equipment are located, on which lines and equipment could be energized are located, or that are located close to energized lines or equipment where an employee could make contact (see paragraph 507.1 for limits on voltages 5kV or more). The rubber gloves should be put on before the employee ascends a pole

or structure or raises an aerial device off the ground or device's cradle. Furthermore, employees should not remove the gloves until they have descended the pole or structure or returned the aerial device to the ground or cradle. As a minimum requirement, gloves shall be put on before the employee comes within falling or reaching distance (based on the AC Live-Line Work Minimum Approach Distance as indicated in Table 5.2) of unprotected energized circuits or apparatus or those that may become energized, and they shall not be removed until the employee is entirely out of falling or reaching distance of such circuits or apparatus. Employees shall refer to Utility policy regarding additional rubber glove requirements.

d) In addition, rubber gloves shall be worn during the following conditions:

(12) Pulling in wires or handling other conducting materials near circuits, apparatus, or equipment that is or may become energized.

The Commission's Order arose out of an incident which occurred on July 30, 2012, when Ronnie Parrett, a SKRECC employee, sustained injuries after he made contact with an energized 7200 volt conductor while working on a job site at 2750 East Williamsburg Road in Whitley City, Kentucky. Ronnie Parrett, Mike Higginbotham and Brad Coffey, ("the crew") all SKRECC employees, were working on the site together. At the time of the incident, Mr. Parrett was preparing to install a secondary service on dead end pole #144512. Crew leader Mr. Higginbotham and Mr. Parrett positioned the bucket truck at the pole to install triplex service. Mr. Higginbotham stated that he told Mr. Parrett he was not sure if the transformer was hot or not, and Mr. Parrett informed him he would check it. However, in a written statement prepared on April 11, 2013,

almost eight and a half months after the incident, Mr. Parrett stated that he had an eight foot long “hot stick” in the bucket to de-energize the transformer when he reached it, and because he had assumed that the transformer was energized he did not believe it was necessary to confirm whether or not it was. Mr. Parrett was removing vines that had grown up on the pole as he ascended in the aerial device. Crew Leader Mr. Higginbotham and crew member Mr. Coffey both stated they heard an arc, but did not witness the event. According to each crew member, both men looked up and saw Mr. Parrett slumped over the aerial bucket. Mr. Higginbotham made the mayday distress call over the company radio and Mr. Coffey began an aerial rescue to lower Mr. Parrett down to the truck. As a result of the incident, Mr. Parrett’s left hand was severely burned. He also sustained a possible burn on his right middle finger, and possible flash burns and wounds to his face.

On June 7, 2013, SKRECC filed a response to the Commission’s May 6, 2013 Order. SKRECC’s response set forth numerous defenses, including the denial of any violations of KRS 278.042, the NESC, or its own safety manual; that Mr. Parrett assumed the transformer was energized and therefore his failure to test and see if the transformer was energized was only of “marginal importance”²; and it asserted that Mr. Parrett had not reached the minimum approach distance and, therefore, use of rubber gloves and personal protective equipment was not yet required. SKRECC also stated that it planned to address these issues at the informal conference with Commission Staff.

² Case No. 2013-00158, *South Kentucky Alleged Failure to Comply with KRS 278.042*, Response of South Kentucky Rural Cooperative Corporation to Incident Investigation Report of December 3, 2012 and Commission Order of May 6, 2013, (Ky. PSC filed June 7, 2013).

At the informal conference held on June 27, 2013, Commission Staff asked SKRECC to supply specific and detailed documentation addressing its revised safety policies and training programs, to provide explicit information pertaining to the policies and procedures SKRECC has or will enact pertaining to a vine management program, and to identify the itemized monetary costs incurred by the institution of the training programs, safety policies, vine management methods, and the purchase of related equipment and material. SKRECC complied with this request in its Response to the Informal Conference Memorandum ("Response"), filed July 17, 2013.

As a result of discussions held during the informal conference, SKRECC's Response, and negotiations between Commission Staff and SKRECC, SKRECC and the Commission Staff submit the following Stipulation of Facts and Settlement Agreement ("Stipulation") for the Commission's consideration in rendering its decision in this proceeding:

1. SKRECC agrees that the Staff's Incident Investigation Report ("Report"), Appendix A to the Commission's May 6, 2013 Order in this case, accurately describes and sets forth the facts and circumstances surrounding the incident, giving rise to the Order.

2. In accordance with this agreement, SKRECC has purchased spare voltage detection devices to be kept in inventory for use when a device on a truck needs to be sent out for repair or is otherwise unavailable.

3. Following the incident, all SKRECC employees were advised to treat vines near the primary line or transformers as potentially energized, and were informed of the steps to take in those scenarios.

4. SKRECC has designed a Right-of-Way Plan for vine management. SKRECC has hired a two-person contractor crew that will operate for a two year period to specifically find and remove vines throughout SKRECC's service area. SKRECC will assign an employee ahead of the two-person crew to find the heavy-growth areas so that the crew's time is more efficiently spent.

5. SKRECC management has internally adopted the 15th Edition of the APPA Safety Manual, with formal company-wide implementation to occur on October 1, 2013, which will include a "ground-to-ground; cradle-to-cradle" rule that requires employees to utilize personal protective equipment, specifically rubber gloves and sleeves, from the time they leave the ground or cradle of a truck to the time they are back on the ground or in the cradle.

6. SKRECC will include annual training for all employees on the dangers of vine growth on poles and the importance of de-energizing the line or insulating the vine from energized lines during our annual hazard recognition training program

7. SKRECC has estimated some of the financial costs that have resulted from this incident to be as follows:

<u>Post-Incident Costs Already Incurred</u>	<u>Cost</u>
Review of incident with every outside employee	\$2,646.00
Three safety meetings to discuss incident and vine precautions (includes employee travel time)	\$13,256.81
Vine Removal- three days by right-of-way employees	\$6,218.31
Equipment- Pruners, sprayers, and de-viners	\$417.71
Total:	<u>\$22,538.83</u>

In addition to the costs already incurred, the costs to operate a vine management program are estimated to be \$217,146 annually. This cost includes one employee and a two-person contract crew to perform vine removal. These costs will be incurred annually until the entire electrical system is examined, which SKRECC estimates will take 18 months to 2 years. Once the entire system has been inspected and vines addressed, the vine program will be reassessed to see if it needs to continue. SKRECC will inform the Commission once it has examined the electrical system with its assessment as to whether the vine management program will need to continue.

8. SKRECC agrees to pay the amount of \$7,500 in full settlement of the proceeding. The scope of this proceeding is limited by the Commission's May 6, 2013 Order to whether SKRECC should be assessed penalties under KRS 278.990 for multiple alleged violations of the NESC rules as made applicable under KRS 278.042, and for multiple violations of its safety manual, with each violation having a potential penalty of \$2,500. Neither the payment of \$7,500, nor any agreement contained in this Stipulation, shall be construed as an admission by SKRECC of any liability in any legal proceeding or lawsuit arising out of the facts set forth in the Report, nor shall the Commission's acceptance of this Stipulation be construed as a finding of a willful violation of any Commission regulation, NESC rule, or rules within SKRECC's safety manual.

9. In the event that the Commission does not accept this Stipulation in its entirety, SKRECC and Staff reserve their rights to withdraw therefrom and require that a hearing be held on any and all issues herein, and that none of the provisions contained herein shall be binding upon the parties hereto, used as an admission by SKRECC of

any liability in any legal proceeding or lawsuit arising out of the facts set forth in the Report, or otherwise used as an admission by either party.

10. This Stipulation is for use in Commission Case No. 2013-00158. None of the provisions in this Stipulation establishes any precedent for any other case and neither SKRECC nor Staff shall be bound by any part of this Stipulation in any other proceeding, except that this Stipulation may be used in any proceeding by the Commission to enforce the terms of this Stipulation or to conduct a further investigation of SKRECC's service, and SKRECC shall not be precluded or estopped from raising any issue, claim, or defense, therein by reason of the execution of this Stipulation.

11. SKRECC and Staff agree that the foregoing Stipulation is reasonable, is in the public's interest, and should be adopted in its entirety by the Commission. If so adopted by the Commission, SKRECC agrees to waive its right to a hearing and will not file any petition for rehearing or seek judicial appeal.

South Kentucky Rural Electric Cooperative Corporation

BY Allen Anderson
Title President & CEO
Date 9-12-13

STAFF OF THE KENTUCKY PUBLIC SERVICE COMMISSION

BY Ann Arnold
Title Staff Attorney
Date 9-17-2013