COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

LOUISVILLE GAS AND ELECTRIC COMPANY FAILURE TO COMPLY WITH SAFETY RULES AND PRACTICES	)	CASE NO. 9906

SHOW CAUSE ORDER

On December 18, 1986, W. V. Gilkey, an employee of Louisville Gas and Electric Company ("LG&E"), suffered second and third degree burns to both hands due to contact with an energized lightning arrestor. Mr. Gilkey had just completed the installation of a transformer and had energized the riser, which is the circuit between a primary voltage line and a transformer including a lightning arrestor (See Attachment A, Page 1). He apparently reached to straighten the energized lightning arrestor and received the burns upon contacting it. His foreman, Tommy French, was present and in charge at the time of the accident. The accident occurred at 802 Surry Lane, Louisville, Kentucky.

A field investigation was conducted by Commission staff on December 19, 1986. The report of that investigation is attached as Appendix B to this Order. It was determined that Mr. Gilkey and Mr. French were in violation of the Commission's regulation 807 KAR 5:041, Section 3(7) - Acceptable Standards, specifically

defined in 1981 National Electric Safety Code, Sections -- 42(420H)-Tools and Protective Equipment; and, 42(421B)-Duties of a Foreman (See Attachment C, Pages 1 and 2, items checked). The Commission's regulation 807 KAR 5:006, Section 22 - Safety Program, states that each utility shall adopt and execute a safety program. Thus, it was also determined that Mr. French was in violation of LG&E's Safety Manual, Page 4, subtitle General Safety, section C1., Responsibility of Supervisor, subsection 1.1 (See Attachment D, Page 1). Mr. Gilkey was also in violation of LG&E's Safety Manual, Page 56, subtitle Electrical, section E2., Tools and Protective Equipment, subsection 2.17 (See Attachment D, Page 2).

The information set forth in the Commission's field investigation report indicates that Mr. Gilkey did not maintain compliance with proper safety procedures and Mr. French failed to ensure such compliance. Therefore, the Commission finds that LG&E should be required to appear and explain the reasons why the aforementioned regulations were violated and present a detailed plan to prevent the reoccurrence of these violations.

IT IS THEREFORE ORDERED that LG&E shall appear before the Commission on May 21, 1987, at 9:30 A.M., Eastern Daylight Time, in the Commission's offices at Frankfort, Kentucky, for the purpose of presenting evidence related to LG&E's program to ensure compliance with 807 KAR 5:041, Section 3(1), and its own Safety Manual, and to show cause if any it can, why the Commission should not impose penalties pursuant to KRS 278.990.

Done at Frankfort, Kentucky, this 15th day of April, 1987.

PUBLIC SERVICE COMMISSION

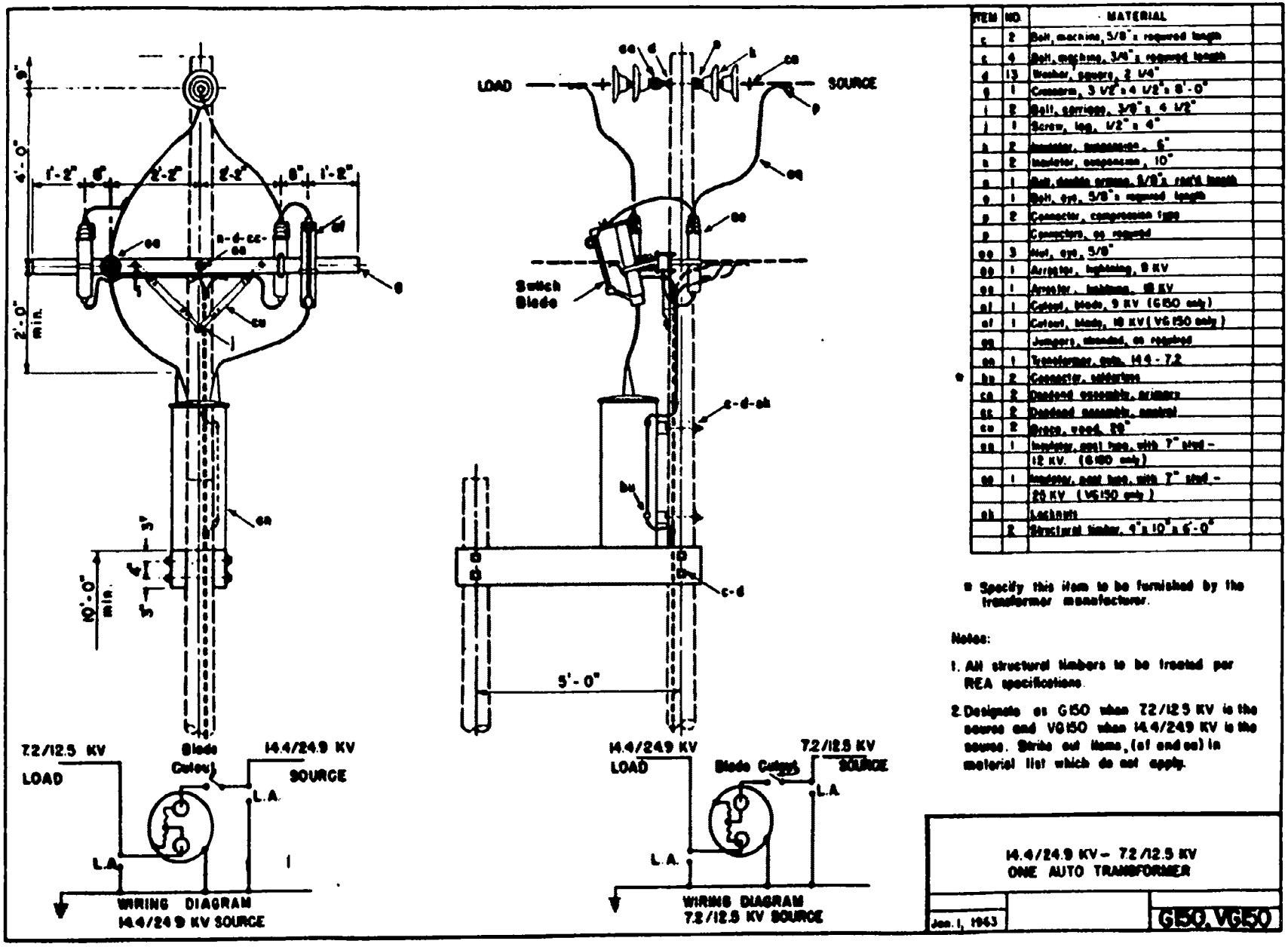
Chairman

Vice Chairman

Commissioner

ATTEST:

Executive Director



ITEM	NO.	MATERIAL
c	2	Bolt, machine, 5/8" x required length
c	4	Bolt, machine, 3/4" x required length
d	13	Washer, square, 2 1/4"
e	1	Crossarm, 3 1/2" x 4 1/2" x 8'-0"
i	2	Bolt, carriage, 3/8" x 4 1/2"
j	1	Screw, lag, 1/2" x 4"
k	2	Insulator, suspension, 5"
k	2	Insulator, suspension, 10"
n	1	Bolt, double arming, 5/8" x req'd length
q	1	Bolt, eye, 5/8" x required length
p	2	Connector, compression type
p		Connectors, as required
qq	3	Nut, eye, 5/8"
qq	1	Arrester, lightning, 9 KV
qq	1	Arrester, lightning, 18 KV
ql	1	Cutout, blade, 9 KV (G150 only)
ql	1	Cutout, blade, 18 KV (VG150 only)
qq		Jumpers, stranded, as required
ss	1	Transformer, pole, 14.4 - 7.2
bs	2	Connector, solderless
cs	2	Deadend assembly, primary
qs	2	Deadend assembly, control
cc	2	Brace, wood, 30"
ss	1	Insulator, post type, with 7" stud - 12 KV. (G150 only)
qq	1	Insulator, post type, with 7" stud - 20 KV (VG150 only)
ah		Lashwire
	2	Structural timber, 4" x 10" x 6'-0"

* Specify this item to be furnished by the transformer manufacturer.

Notes:

1. All structural timbers to be treated per REA specifications.
2. Designate as G150 when 7.2/12.5 KV is the source and VG150 when 14.4/24.9 KV is the source. Strike out items, (ql and qs) in material list which do not apply.

14.4/24.9 KV – 7.2/12.5 KV
ONE AUTO TRANSFORMER

Jan. 1, 1963

G150, VG150

ATTACHMENT A
PAGE 1

REA Forms Book # 21 REA Form 803

Intra-Agency Memorandum

Kentucky Public Service Commission

TO: Claude G. Rhorer, Jr., Director
Division of Engineering and Services

THRU: J. Wayne Bates, Manager
Electric Branch

FROM: Jeffery L. Gilpin
Utility Investigator, Sr.
Electric Branch

SUBJECT: Accident Investigation involving
Louisville Gas and Electric Company's Distribution System

DATE: January 19, 1987

Attached please find the Report of the investigation of the accident in which Mr. W.V. Gilkey was injured.

JLG:jsb

Attachment

_____ PRELIMINARY

_____ FINAL

ELECTRICAL UTILITY ACCIDENT INVESTIGATION

DATE OF THIS REPORT 1-16-87 SUBMITTED BY Jeffery L. Gilpin

NAME OF UTILITY Louisville Gas and Electric Company

ACCIDENT REPORTED BY Russ Edwards

DATE & TIME ACCIDENT REPORTED 12-18-86 12:10 P.M.

DATE AND TIME ACCIDENT OCCURRED 12-18-86 11:30 A.M.

DATE OF ACCIDENT INVESTIGATION 12-19-86

PERSONS ASSISTING IN THE INVESTIGATION William R. Skaggs and William Harding of LG&E; John Land of the Public Service Commission staff.

NAME OF VICTIM(S) 1. W.V. Gilkey SEX M AGE 34

FATAL No NAME OF EMPLOYER: Louisville Gas and Electric Co.

INJURIES Second and third degree burns to both hands.

2. _____ SEX _____ AGE _____

FATAL _____ NAME OF EMPLOYER: _____

INJURIES _____

3. _____ SEX _____ AGE _____

FATAL _____ NAME OF EMPLOYER: _____

INJURIES _____

ELECTRICAL UTILITY ACCIDENT INVESTIGATION (Continued)

LOCATION OF ACCIDENT SITE 802 Surry Lane, Louisville, Kentucky

DESCRIPTION OF ACCIDENT Mr. Gilkey had just completed the installation of a transformer and had made the riser hot when he apparently reached to straighten a lightning arrestor that was energized and received the burns. He did not have rubber gloves or sleeves on at the time of contact. His foreman, Tommy French, was present and in charge at the time of the accident.

SOURCE OF INFORMATION William R. Skaggs and William Hardin of LG&E; LG&E "Notification of Accident" Form(attached); on site investigation.

VIOLATIONS OF COMMISSION REGULATIONS 807 KAR 5:041, Section 3(1)-Acceptable Standards 1981 NESC Section 42(420 H)-Tools and Protective Equipment. 1981 NESC Section 42(421 B)-Duties of a Foreman.

RECOMMENDATIONS Review the safety procedures and work procedures required when changing transformers with all personnel, and especially with foremen.

CORRECTIVE ACTION N/A

LINE CLEARANCES

	As Measured	Minimum Allowed by NESC
A. AT POINT OF ACCIDENT		
Phase conductor to ground elevation:	34' 3"	20.6'
Neutral conductor to ground elevation:	30' 8"	18.6'
Communication conductor to ground elevation:	N/A	N/A
Phase conductor to structure:	N/A	N/A
Neutral conductor to structure:	N/A	N/A
Communication conductor to structure:	N/A	N/A
B. AT LOWEST POINT OF SPAN		
Phase conductor to ground elevation:	N/A	N/A
Neutral conductor to ground elevation:	N/A	N/A
Communication conductor to ground elevation:	N/A	N/A

C. SPAN LENGTH 310'

Date the line or facilities were constructed: _____

Utility: Louisville Gas and Electric Company

Date: 12-19-86 **Time** 1:00 P.M.

Approximate temperature: 41 Degrees F

Measurements made by: Jeffery L. Gilpin

Submitted by: Jeffery L. Gilpin

Section 42. Supply Systems — Rules for Employees

420. General Precautions

A. Rules and Emergency Methods

The safety rules shall be carefully read and studied. Employees may be called upon at any time to show their knowledge of the rules.

Employees shall familiarize themselves with approved methods of first aid, rescue techniques, and fire extinguishment.

B. Safeguarding Oneself and Others

The care exercised by others should not be relied upon for protection.

1. Employees shall heed warning signs and signals and warn others who are in danger near energized equipment or lines.
2. Employees shall report promptly to the proper authority any of the following:
   a. Line or equipment defects such as abnormally sagging wires, broken insulators, broken poles, or lamp supports.
   b. Accidentally energized objects such as conduits, light fixtures, or guys.
   c. Other defects that may cause a dangerous condition.
3. Employees whose duties do not require them to approach or handle electric equipment and lines shall keep away from such equipment or lines and should avoid working in areas where objects and materials may be dropped by persons working overhead.
4. Employees who work on or near 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.

C. Qualifications of Employees

1. Inexperienced employees working on or about energized equipment or lines shall work under the direction of an experienced and qualified person at the site.

2. Employees who do not normally work on or about electric-supply lines and equipment but whose work brings them into these areas for certain tasks shall proceed with this work only when authorized by a qualified person.
3. If an employee is in doubt as to the safe performance of any work assigned to him, he shall request instructions from his supervisor or other qualified person.

D. Energized or Unknown Conditions

Electric-supply equipment and lines shall be considered energized, unless they are positively known to be de-energized. Before starting work, preliminary inspections or tests shall be made to determine existing conditions. Operating voltages of equipment and lines should be known before working on or near energized parts.

E. Ungrounded Metal Parts

All ungrounded metal parts of equipment or devices such as transformer cases and circuit breaker housings shall be considered to be energized at the highest voltage to which they are exposed, unless these parts are known by test to be free from such voltage.

F. Arcing Conditions

Employees should keep all parts of their bodies as far away as practical from switches, circuit breakers, or other parts at which arcing may occur during operation.

G. Batteries

1. Enclosed areas containing storage batteries shall be adequately ventilated. Smoking, the use of open flames, and tools which may produce sparks should be avoided in such enclosed areas.
2. Employees shall use eye and skin protection when handling an electrolyte.
3. Employees shall not handle energized parts of batteries unless necessary precautions are taken to avoid shock and short circuits.

✓H. 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.

I. Clothing
1. The clothing worn by an employee in the performance of his duties shall be suitable for the work to be performed and the conditions under which such work is to be performed.
2. When working in the vicinity of energized lines or equipment, the wearing of exposed metal articles such as key or watch chains, rings, wrist watches, bands, or zippers should be avoided.

J. Supports and Ladders
1. No employee, or any material or equipment, shall be supported or permitted to be supported on any portion of a tree, pole structure, scaffold, ladder, walkway, or other elevated structure or aerial device, etc, without it first being determined, to the extent practical, that such support is adequately strong, in good condition, and properly secured in place.
2. Portable wood ladders intended for general use shall not be painted except with a clear nonconductive coating, nor shall they be longitudinally reinforced with metal.
3. Portable metal ladders intended for general use shall not be used when working on or near energized parts.
4. If portable ladders are made partially or entirely conductive for specialized work, necessary precautions shall be taken to insure that their use will be restricted to the work for which they are intended.

K. Safety Straps
1. An employee working in an elevated position shall use a suitable safety strap or other approved means to prevent falling.
2. Safety traps or other devices shall be inspected by the employee to assure that they are in safe working condition.
3. Before an employee trusts his weight to the safety strap or other device, he shall determine that the snaps or fastenings are properly engaged and that he is secure in his body belt and safety strap.

L. Fire Extinguishers
In fighting fires near exposed energized parts, employees shall use fire extinguishers or materials which are suitable for the purpose. If this is not possible, all adjacent and affected equipment should first be de-energized.

M. Repeating Messages
Each employee receiving an oral message concerning the switching of lines and equipment shall immediately repeat it back to the sender and obtain his identity. Each employee sending such an oral message shall require it to be repeated back to him by the receiver and secure the latter's identity.

N. Machines and Moving Parts
Employees working on normally moving parts of remotely controlled equipment shall be protected against accidental starting by proper tags installed on the starting devices, and by locking or blocking where practical. Employees shall, before starting any work, satisfy themselves that these protective devices have been installed. When working near automatically or remotely operated equipment such as circuit breakers which may operate suddenly, employees shall avoid being in a position where they might be injured from such operation.

O. Fuses
When fuses must be installed or removed with one or both terminals energized above 1 kV, special tools insulated for the voltage shall be used. Insulating tools or gloves should be used for voltages between 300 and 1000. When installing expulsion type fuses, employees shall wear safety glasses or safety goggles and take precautions to stand clear of the exhaust path of the fuse barrel.

P. Cable Reels
Cable reels shall be securely blocked so they cannot roll accidentally.

421. Operating Routines

A. Duties of a System Operator
A system operator shall:
1. Keep informed of operating conditions affecting the safe and reliable operation of the system.
2. Maintain a suitable record showing operating changes in such conditions.

B. Duties of a Foreman
A foreman shall:
1. Adopt such precautions as are within his power to prevent accidents and to see that the safety rules and operating procedures are observed by the employees under his direction.

ATTACHMENT C
PAGE 2

GENERAL SAFETY

C1. RESPONSIBILITY OF THE SUPERVISOR (INCLUDES FOREMAN, OR OTHER PERSONS IN CHARGE OF WORK)

1.1 The supervisor shall be responsible for the safety of the employees working under his direction, and for the safety of the general public in connection with his work. The authority and responsibility for the action necessary to prevent accidents is an integral part of his job.

1.2 A "job briefing" shall be held prior to starting a job to acquaint employees with an unfamiliar type of work or procedure. An estimate of potential hazards should be made at these briefings and provisions made to supply needed safety equipment. (See Fig. C.1)

1.3 The supervisor shall plan the work, giving consideration to the dangers involved and to whether the employees and the employee's clothing, the tools, the materials and safety devices are proper and adequate for doing the work in a safe manner. He shall instruct the employees under his supervision how to do the work in a safe manner and assure himself that they understand and follow instructions. Special instructions shall be given to new employees or other employees that may have been assigned new duties.

1.4 The supervisor shall issue such instructions as may be required to safely meet local conditions for which rules are not provided in this Safety Manual.

1.5 When work is being performed under conditions which may constitute special hazards, consideration shall be given to the need for designating an employee to render emergency assistance if needed. This employee may also perform other duties but his primary responsibility shall be to render emergency assistance to the workmen.

1.6 When it is necessary for a supervisor to leave the job, he shall designate an employee to be in charge of the job during his absence.

1.7 The supervisor shall be responsible for having necessary approved equipment, such as warning signs, barricades, guards, handrails, and lights properly placed when and wherever needed.

1.8 If a difference of opinion arises with regard to the meaning or application of any of these rules, or as to the means necessary to carry them out, the decision of the employee's supervisor shall be followed.

2.14 Particular attention shall be given to the surface coating of insulating tools used around electrical equipment. These tools include ladders, pike poles, switch sticks, live-line tools, and insulating platforms. Some paints contain lead or zinc, which are conducting materials; therefore, only varnish or other transparent insulating preservatives shall be used. (See Par. C13.3)

2.15 Live-line tools shall not be laid directly on the ground or against sharp objects, such as barbed-wire fences. Special tool holders or tarpaulins should be used for this purpose.

2.16 Insulating tools shall be stored in a dry location. Tools shall either be hung in a vertical position, or suitable containers (or racks) shall be provided to protect the tools from damage.

2.17 When personal rubber protective equipment is required, it shall be put on before coming within reach of energized equipment and removed only when out of reach of energized equipment.

2.18 Rubber protective equipment, such as line hose and insulator hoods, shall be installed from a safe position. When a lineman is on a pole, the safe position will normally be below the conductors or apparatus to be covered.

2.19 Personal rubber protective equipment shall be worn when climbing a pole supporting energized equipment that is known or suspected to be defective. Rubber gloves shall be worn if hand contact is likely to be made to hardware supporting known or suspected defective insulators supporting energized conductors.

2.20 Before each use, rubber goods, hot sticks, and other protective equipment shall be visually inspected for embedded foreign matter, cuts, punctures, deep scratches, etc. Defective equipment shall not be used.

2.21 Rubber gloves which are to be used for electrical work shall be given an air test before each use. This can be accomplished by rolling up the glove gauntlet toward the palm so that the trapped air will stretch the rubber. A thorough examination then can be made for air leaks and other defects. If there is leakage, or if defects are found, the gloves shall not be used. This is only a rough test and is not a substitute for the required high voltage electrical test.

2.22 Rubber gloves shall not be worn wrong side out, or be left in that condition. Rubber gloves shall not be folded. Blankets shall be rolled, rather than folded, when not in use. Line