COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

LOUISVILLE GAS AND ELECTRIC COMPANY	)	
	)	CASE NO. 2013-00373
ALLEGED FAILURE TO COMPLY WITH KRS 278.042	)	

ORDER

Louisville Gas and Electric Company ("LG&E"), a Kentucky corporation which engages in the distribution for compensation of gas and electricity to the public for heat, light, power, and other uses, is a utility subject to Commission jurisdiction.[1]

KRS 278.042 requires the Commission to ensure that each electric utility constructs and maintains 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").

KRS 278.030 requires every utility to furnish adequate, efficient, and reasonable service. KRS 278.260 permits the Commission, upon its own motion, to investigate any act or practice of a utility that affects or is related to the service of a utility. KRS 278.280(1) further permits the Commission, after conducting such investigation and finding that a practice is unreasonable, unsafe, improper, or inadequate to determine the reasonable, safe, proper, or adequate practice or methods to be observed and to fix same by Order.

[1] KRS 278.010(3)(a).

Pursuant to 278.280(2), which directs the Commission to prescribe rules and regulations for the performance of services by utilities, the Commission has promulgated Administrative Regulation 807 KAR 5:006, Section 25, which requires all utilities to adopt and execute a safety program. 807 KAR 5:006, Section 25(1) requires each utility to establish a safety manual with written guidelines for safe working practices and procedures to be followed by utility employees. Here, LG&E has adopted the LG&E Health and Safety Manual.

Commission Staff submitted to the Commission an Accident Investigation Staff Report ("Report") regarding this incident, which is attached to this Order as the Appendix. The Report alleges that on May 23, 2013, Seneca Newton, a LG&E employee, sustained injuries while replacing a 480-volt line in the underground network system at 719 West Jefferson Street in Louisville, Kentucky. The work crew at the job site included crew leader Robert Yates, victim Seneca Newton, Matt Bewley, and Scott Underwood. Preceding the incident, Mr. Newton was attempting to connect new energized secondary conductors. Mr. Newton was working on multiple energized conductors at the same time, and when the conductors were connected, an arc occurred, causing burns to Mr. Newton's right forearm. Mr. Newton admitted that he was not wearing his sleeves down and buttoned at the time of the incident.[2]

The access grate to the underground vault at the incident site was also not secured to prevent unauthorized entry, and the access ladder was not made of non-conductive material.

[2] See Attachment A to the Report, Seneca Newton's written statement.

Based on Commission Staff's investigation of the incident as set forth in the Report, the information provided by LG&E in its seven-day summary report (Attachment A to the Report), Commission Staff alleges that LG&E has violated multiple provisions of the NESC and of its safety manual. These violations are identified as follows:

1. Failure to properly phase the conductors prior to connecting the two conductors.

   a. NESC, Part 3, Section 31, Rule 313.A.3 – General Requirements applying to Underground Lines – Tests – When considered necessary, lines and equipment shall be subjected to practical tests to determine required maintenance.

   b. NESC, Part 4, 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.

   c. LG&E Health & Safety Manual, A.2.1 (Individual Responsibility) – General Rules – Individual Responsibility – It is the responsibility of each employee to perform assigned duties to assure:
      a. Safety to himself or herself.
      b. Safety to fellow employees.
      c. Protection of the public.
      d. Protection of company property

   d. LG&E Health & Safety Manual, E.8.6 – Underground Residential Distribution – Entering Underground Structures – Before any work is done on a cable, it shall be identified by an approved method. If there is any doubt as to the identification, work shall not be started until checked and identified by a qualified employee.

2. Failure to work on only one energized conductor at a time.

   a. LG&E Health & Safety Manual, E.5.7 – Underground Residential Distribution – Work on Energized Equipment –

URD – Only one energized secondary or service conductor shall be worked on at any one time, and protective devices shall be used to insulate or isolate it from all others.

b. LG&E Health & Safety Manual, E.9.7 – Underground Residential Distribution – Work on Energized Cables, Manholes or Vaults – Immediately after each conductor of an energized cable less than 600 volts is cut in two, the ends shall be insulated before another conductor is cut. During the course of the work, only one insulated conductor shall be worked at any one time.

3. Failure to lock access grate to utility vault.

NESC, Part 3, Section 32, Rule 323.E.3 – Underground Conduit System – Vault and Utility Tunnel Access – Where accessible to the public, access doors to utility tunnels and vaults shall be locked unless qualified persons are in attendance to restrict entry by unqualified persons. When vaults and utility tunnels contain exposed live parts, prominent safety signs shall be visibly posted before entering the vault.

4. Failure to button sleeves while performing work on energized underground cables.

LG&E Health & Safety Manual, E.5.8 – Underground Residential Distribution – Work on Energized Equipment – URD – An approved shirt or coveralls, with full-length sleeves rolled down and cuffs buttoned, shall be worn when work is performed on any energized UG cable or apparatus.

5. Failure to use an approved nonconductive ladder to gain access to the vault.

LG&E Health & Safety Manual, E.8.4 – Underground Residential Distribution – Entering Underground Structures – An approved nonconductive straight ladder shall always be used in entering or leaving a manhole or vault. Climbing into or out of manholes by stepping on cables or hangers is forbidden.

Based on its review of the Report and being otherwise sufficiently advised, the Commission finds that prima facie evidence exists that LG&E has failed to comply with

KRS 278.042, the most recent edition of the National Electrical Safety Code, and LG&E's Safety Manual. We further find that a formal investigation into the incident that is the subject matter of the Report should be conducted and that this investigation should also examine the adequacy, safety, and reasonableness of LG&E's practices related to the construction, installation, and repair of electric facilities.

The Commission, on its own motion, HEREBY ORDERS that:

1. LG&E shall submit to the Commission, within 20 days of the date of this Order, a written response to the allegations contained in the Report.

2. LG&E shall appear on Wednesday, January 29, 2014, at 10:00 a.m. Eastern Standard Time, in Hearing Room 1 of the Commission's offices at 211 Sower Boulevard, Frankfort, Kentucky, for the purpose of presenting evidence concerning the alleged violations of KRS 278.042, from the most recent edition of the National Electrical Safety Code, LG&E's Safety Manual, and showing cause why it should not be subject to the penalties prescribed in KRS 278.990(1) for these alleged violations.

3. At the scheduled hearing in this matter, LG&E shall also present evidence on the adequacy, safety, and reasonableness of its practices related to the construction, installation, and repair of electric facilities as they relate to the facts of this case and whether such practices require revision as related to this incident.

4. The January 29, 2014 hearing shall be recorded by videotape only.

5. The Report in Appendix A is made a part of the record in this case.

6. Any requests for an informal conference with Commission Staff shall be set forth in writing and filed with the Commission within 20 days of the date of this Order.

By the Commission

ENTERED

OCT 24 2013

KENTUCKY PUBLIC
SERVICE COMMISSION

ATTEST:

Executive Director

APPENDIX

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 2013-00373 DATED OCT 24 2013

Commonwealth of Kentucky
Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, Kentucky 40602-0615
Telephone: (502) 564-3940
Fax: (502) 564-3460
psc.ky.gov

ACCIDENT INVESTIGATION STAFF REPORT

Report Date: August 13, 2013

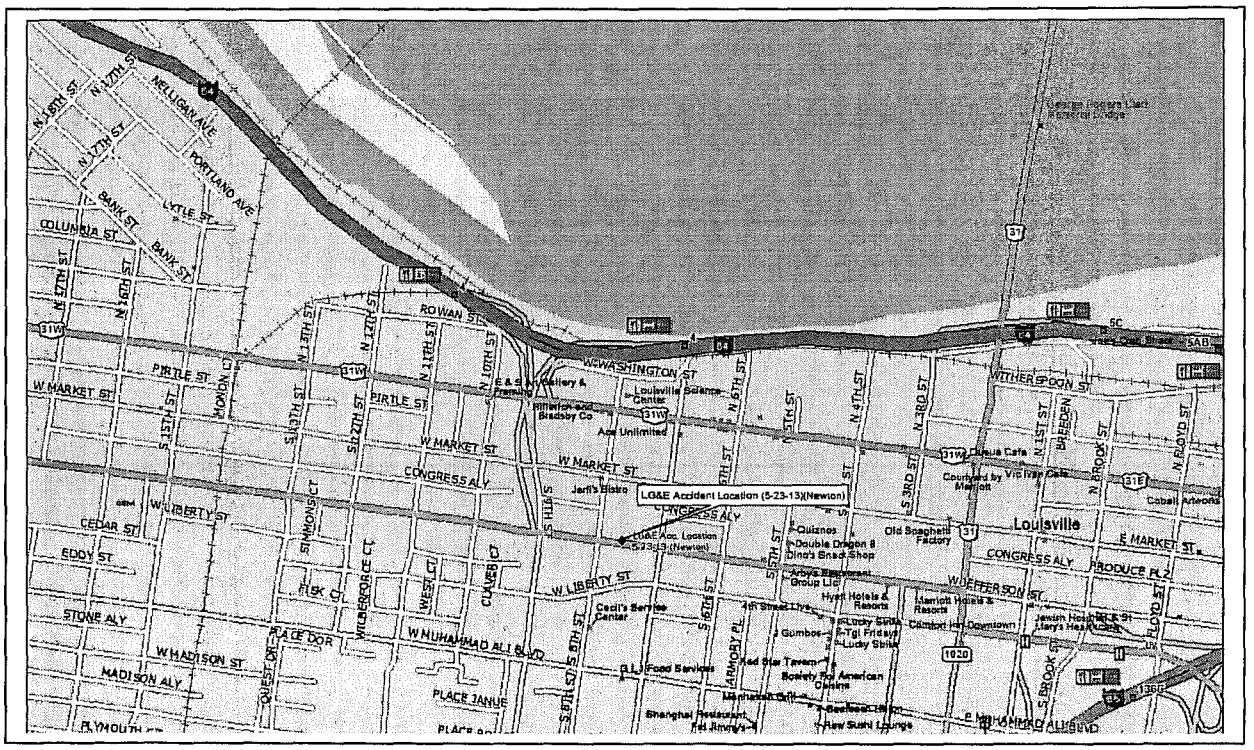
Accident Date: May 23, 2013

Serving Utility: Louisville Gas and Electric

Accident Location: 719 West Jefferson Street, Louisville, Kentucky

Accident Victims: Seneca Newton

PSC Investigator: Steve Kingsolver



Kentucky Public Service Commission

Electric Utility Personal Injury Incident Report

Utility: Louisville Gas and Electric (LG&E)

Reported By: Ken Sheridan
Director of Operations and Security

Incident Occurred: Approximately 12:39PM, May 23, 2013

Utility Discovered: Approximately 12:39PM, May 23, 2013

Utility Discovered Treatment to the victim: Approximately 4:25PM, May 23, 2013

PSC Notified: Approximately 4:30PM, May 23, 2013

PSC Investigated: 9:00 AM, May 24, 2013

Report Received: May 30, 2013

Incident Location: 719 West Jefferson Street
Louisville, Jefferson County, Kentucky

Incident Description:
This accident took place on May 23, 2013 at approximately 12:39 PM at 719 West Jefferson Street, Louisville, Kentucky. The victim, Seneca Newton, was working as a crew member on a crew that was in the process of replacing secondary conductors, 480 Volts, between two vaults that are part of the LG&E underground network system. The conductor being replaced had to pass through two manholes between the two vaults. The conductors were in place and had been energized from one of the vaults through the two manholes and into the vault where this accident happened. In the LG&E underground network system there are multiple sources feeding into a set of underground secondary conductors. The victim was in the process of connecting the new energized secondary conductors to a second source that would also be feeding the new secondary conductors. There is a process called phasing that will determine which conductors can and cannot be connected together. This process was not completed by the victim before he attempted to connect two of the conductors together. This action created an arc that caused burns to the victim's right forearm. The victim admits he did not have his sleeves down and buttoned as required by the LG&E safety manual. During my accident site visit it was noticed that the access grate to the below ground vault where this accident took place was not secured to prevent untrained persons from entering the vault as required by the National Electrical safety Code. Also during this accident site visit it was noticed that the access ladder used to gain entry into this vault was not made of non-conductive material as required by the LG&E Safety Manual.

Victim:	Name:	Address:	Employer:
	Seneca Newton	6611 Fernbush Drive Louisville, Kentucky 40228	LG&E

Witnesses:	Name:	Position	Employer:
	Matt Bewley	Network Technician B	LG&E
	Scott Underwood	Network technician C	LG&E

Employee at job site but did not witness accident:

Name:	Position	Employer:
Robert Yates (Employee in Charge of this Job Site)	Lead Network Technician	LG&E

Note: Statements from the 4 employees listed above are made part of the Utility Summary Report.

Information From: Name:	Position:	Employer:
Ken Sheridan	Director of Operations and Security	LG&E
Keith McBride	LG&E/KU Investigator	LG&E
Bill Harper	Group Leader	LG&E

Temp & Weather: 70-75 Clear and Dry

FINDINGS:

It is the investigator's opinion that LG&E did not meet or exceed the following requirements set forth in the Commission Regulations, the National Electrical Safety Code, and the LG&E Safety Manual.

RELEVANT CODES, STATUTES, REGULATIONS, OR SAFETY MANUAL ISSUES THAT ARE PERTINENT TO THE INVESTIGATION

278.042 Service adequacy and safety standards for electric utilities
National Electrical Safety Code

(1) For the purposes of this section, "NESC" means the National Electrical Safety Code as published by the Institute of Electrical and Electronics Engineers, Inc.
(2) Except as otherwise provided by law, the commission shall, in enforcing service adequacy and safety standards for electric utilities, ensure that each electric utility constructs and maintains 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 NESC.

Effective: June 24, 2003
History: Created 2003 Ky. Acts Ch. 84, sec. 1, Effective June 24, 2003.

2012 National Electric Safety Code:
See 2012 NESC Code to view each rule in its entirety.

National Electrical Safety Code

Part 3: Safety Rules for Underground Lines
Section 31: General Requirements applying to Underground Lines
313: Inspection and Tests of Lines and Equipment
A: Tests
3: When considered necessary, lines and equipment shall be subjected to practical tests to determine required maintenance.
(P-234)

National Electrical Safety Code

Part 3: Safety Rules for Underground Lines
Section 32: Underground Conduit System
323: Manholes, Hand holes, and Vaults
E: Vault and Utility Tunnel Access
3. Where accessible to the public, access doors to utility tunnels and vaults shall be locked unless qualified persons are in attendance to restrict entry by unqualified persons. When vaults and utility tunnels contain exposed live parts, prominent safety signs shall be visibly posted before entering the vault.
(P-241)

National Electrical Safety Code

Part 4: Work Rules for the Operation of Electric Supply and Communication Lines and Equipment
Section 42: General Rules for Employees
420: General
C: Safeguarding Oneself and Others
4: 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 past of the affected electric system, the property of others, and the public in general.
(P-269)

807 KAR 5:006. General rules.

RELATES TO: KRS 65.810, 74, 96.934, 220.510, 278, 49 C.F.R. Part 192, 49 U.S.C. 60105
STATUTORY AUTHORITY: KRS 278.230, 278.280(2), 49 C.F.R. 192
NECESSITY, FUNCTION, AND CONFORMITY: KRS 278.230(3) requires every utility to file with the commission reports, schedules, and other information that the commission requires. KRS 278.280(2) requires the commission to promulgate an administrative regulation for the performance of a service or the furnishing of a commodity by a utility. This administrative regulation establishes requirements that apply to electric, gas, water, sewage, and telephone utilities.

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807 KAR 5:006 General Rules
Section 24: Safety Program

Section 24: Safety Program: Each utility shall adopt and execute a safety program, appropriate to the size and type of its operations. At a minimum, the safety program shall:
(1) Establish a safety manual with written guidelines for safe working practices and procedures to be followed by utility employees.
(2) Instruct employees in safe methods of performing their work.
(3) Instruct employees who, in the course of their work, are subject to the hazard of electrical shock, asphyxiation or drowning, in accepted methods of artificial respiration.

LG&E Safety Manual
(May 23, 2013 Accident) (Victim: Newton)
See LG&E Safety Manual to view each rule in its entirety.

LG&E Safety Manual

A. General Rules
A.2 Individual Responsibility
A.2.1 It is the responsibility of each employee to perform assigned duties to assure:
a. Safety to himself or herself.
b. Safety to fellow employees.
c. Protection of the public.
d. Protection of company property
(P-25)

LG&E Safety Manual

E. Underground Residential Distribution
E.5 Work on Energized Equipment — URD

E.5.7 Only one energized secondary or service conductor shall be worked on at any one time, and protective devices shall be used to insulate or isolate it from all others.
(P-126)

LG&E Safety Manual

E. Underground Residential Distribution
E.5 Work on Energized Equipment — URD
E.5.8 An approved shirt or coveralls, with full-length sleeves rolled down and cuffs buttoned, shall be worn when work is performed on any energized UG cable or apparatus.
(P-126)

LG&E Safety Manual

E. Underground Residential Distribution
E.8 Entering Underground Structures
E.8.4 An approved nonconductive straight ladder shall always be used in entering or leaving a manhole or vault. Climbing into or out of manholes by stepping on cables or hangers is forbidden.
(P-130)

LG&E Safety Manual

E. Underground Residential Distribution
E.8 Entering Underground Structures
E.8.6 Before any work is done on a cable, it shall be identified by an approved method. If there is any doubt as to the identification, work shall not be started until checked and identified by a qualified employee.
(P-130)

LG&E Safety Manual

E. Underground Residential Distribution
E.9 Work on Energized Cables, Manholes or Vaults

E.9.7 Immediately after each conductor of an energized cable less than 600 volts is cut in two, the ends shall be insulated before another conductor is cut. During the course of the work, only one insulated conductor shall be worked at any one time.
(P-130)

Recommendation:

Information on Completed Job Briefing Forms:
Insure that all signatures and employee numbers are legible.
(Possibly print name and sign)

Investigated By: **Name:** **Company:**

Signed: Steve Kingsolver

Date: 8-13-13

Attachments:

A. Utility Incident Report
B. KPSC Photographs of Incident Site
C. KPSC Map of Accident Location

Attachment A

Utility Incident Report

LG&E KU

PPL companies

LG&E and KU Energy, LLC
Corporate Law
220 W. Main Street
Louisville, Kentucky 40202
www.lge-ku.com

Jay Warren
Senior Corporate Attorney
T 502-627-3203
F 502-627-3367
Jay.Warren@lge-ku.com

May 29, 2013

Mr. Eric Bowman
Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602

Re: Secondary Flash Burn
Date of Incident: May 23, 2013

Dear Mr. Bowman:

I am forwarding the enclosed Investigation Report prepared by Keith McBride regarding the injury of LG&E employee Seneca Newton that occurred in Jefferson County, Kentucky on Thursday, May 23, 2013. Louisville Gas & Electric Company is providing this report to the KPSC in accordance with the applicable seven-day reporting requirement. Please return a file stamped copy of the report in the envelope provided.

Should you need additional information concerning this incident, please contact me at (502) 627-3203 so I can direct your request to the appropriate person.

Sincerely,

Jay Warren

JW/kcg

Enclosures:
1) Area print
2) Utility photographs
3) Job briefing form
4) Written statements
5) Training excerpts

REVIEWED
6-4-13
RSK

INVESTIGATION REPORT

Secondary Flash Burn / LG&E Employee
Type of Report

13-ED-E-012
Report Number

Keith McBride
Investigator

May 23, 2013
Date of Incident

Location: **719 West Jefferson Street**
Louisville, Jefferson County, Kentucky, 40203

Incident Summary

On May 23, 2013 at approximately 12:39 P.M. Seneca Newton, LG&E-KU Network Technician-A was making a connection on a 480 volt line in a vault in front of 719 West Jefferson between 7th Street and 8th Street on the north side.

An arc occurred and Mr. Newton received a flash burn to his right forearm.

Ken Sheridan, Director of Operations and Security notified the Kentucky Public Service Commission (KPSC) of the incident.

Incident Investigation

On May 23, 2013 at approximately 12:39 P.M. Seneca Newton, LG&E-KU Network Technician-A was making a connection on a 480 volt line in a vault in front of 719 West Jefferson between 7th Street and 8th Street on the north side.

While making the 480 volt connection, an arc occurred and Mr. Newton received a flash burn to his right forearm. Mr. Newton was taken to the hospital by an LG&E Team Leader where he received treatment.

On May 23, 2013 LG&E Network crews were replacing a 480 volt line because several days prior, voltage was detected on the outside of the insulation. The crews opened up the 480 volt line in the vault in front of 719 West Jefferson in preparation of replacing a section of the 480 volt line west of the vault near 8th Street.

Once the sections of conductors were replaced, Mr. Newton started making the 480 volt connection while energized. Mr. Newton installed a line limiter on one conductor and when Mr. Newton attempted to make the second connection on that phase, an arc occurred.

Investigation found that Mr. Newton was relying on markings placed on the cables and did not phase the conductors.

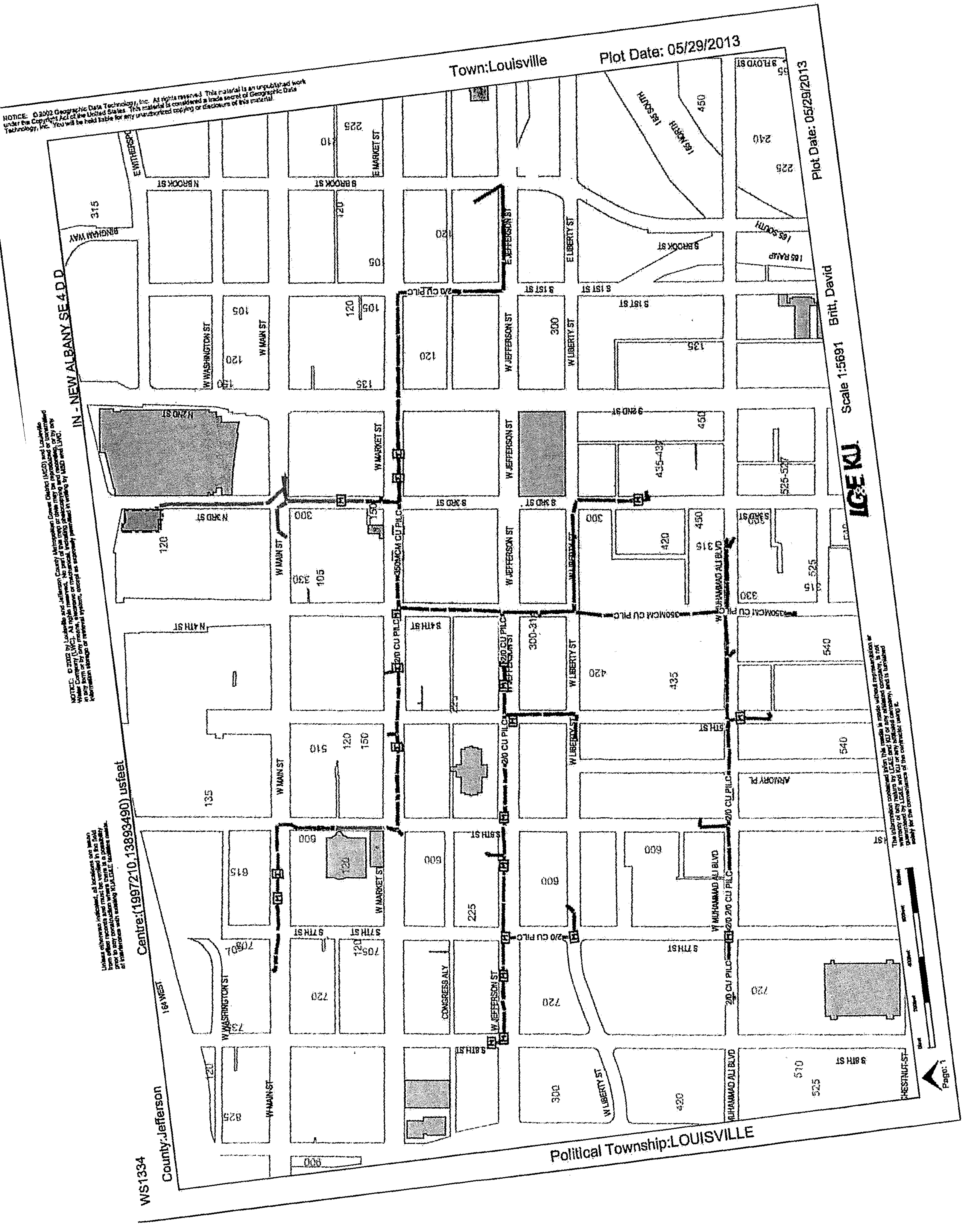
It appears that Mr. Newton bucked phases on this 480 volt line. Mr. Newton received burns to his right forearm and was taken to the hospital where he received treatment and was released that same day.

Injured Employee:
Seneca Newton, Network Technician-A
6611 Fernbush Drive
Louisville, Kentucky 40228
DOB: [redacted]

Robert Yates, Lead Network Technician / Not in vault
Matt Bewley, Network Technician-B / Co-worker
Scott Underwood, Network Technician-C / Co-worker

- Temperature : 70 – 75 degrees / clear
- Secondary glove testing expiration date: July 5, 2013
- Leather protectors used

DATE OF REPORT: May 29, 2013
END OF REPORT


Town:Louisville
Plot Date: 05/29/2013
Political Township:LOUISVILLE
County:Jefferson
WS1334
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IN - NEW ALBANY SE 4 D D
Scale 1:5691
Britt, David
LG&E KU
Page: 1
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CHESTNUT ST
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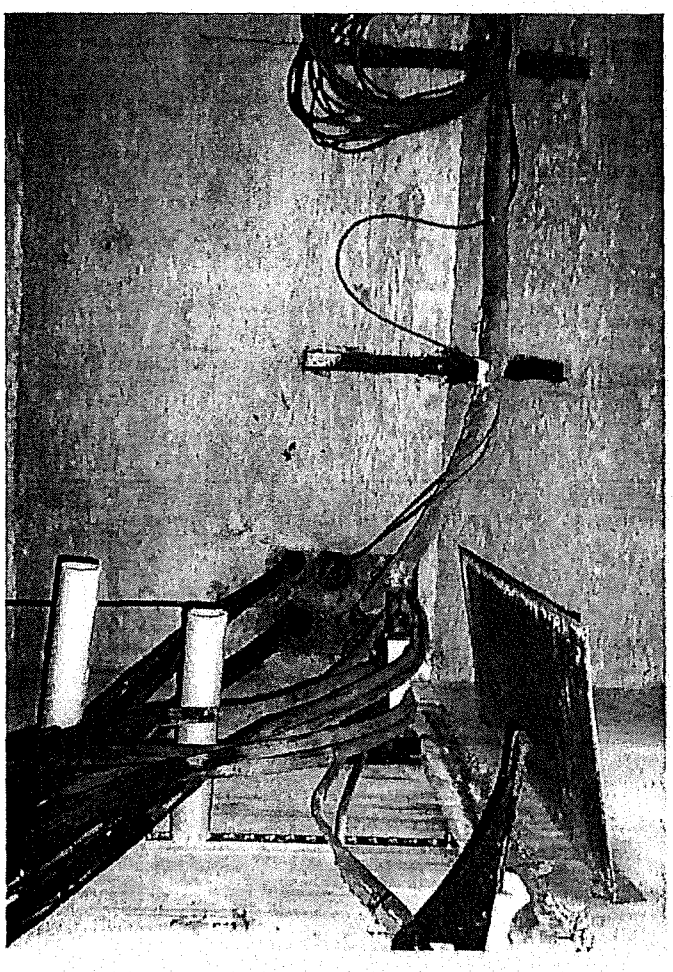
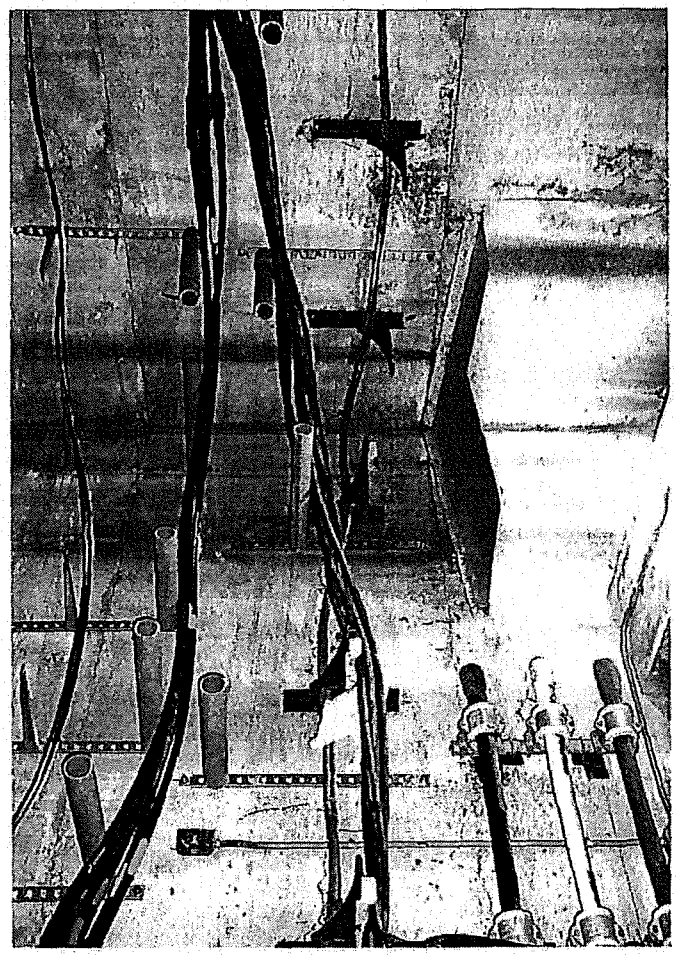
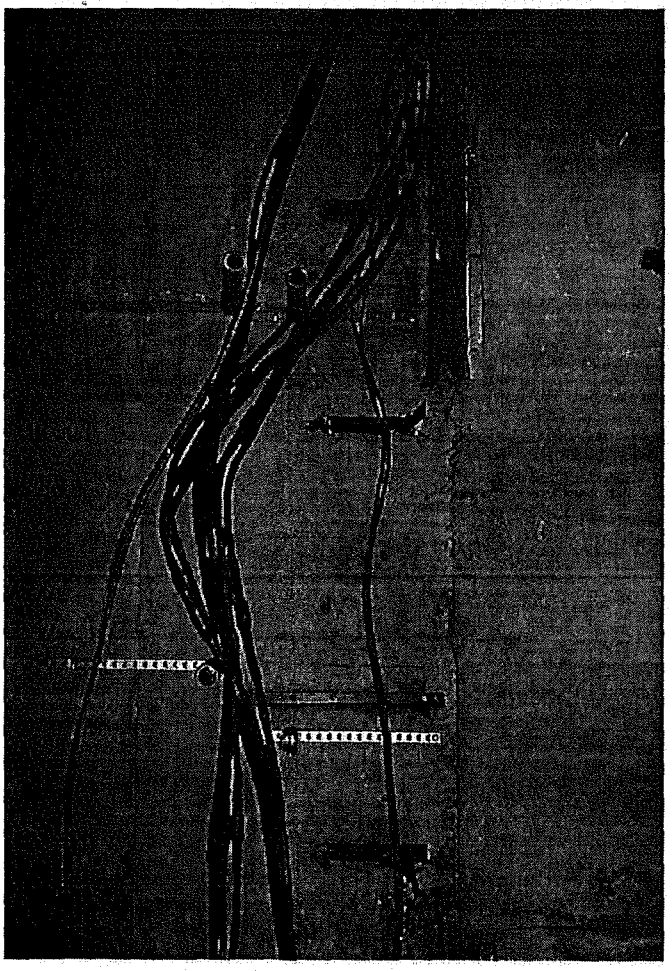
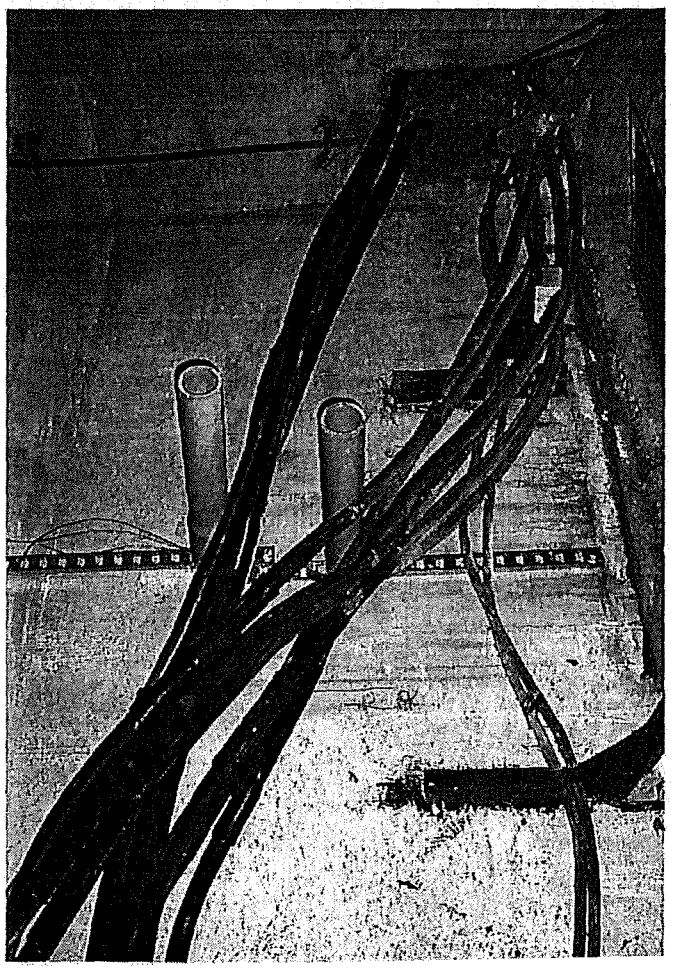


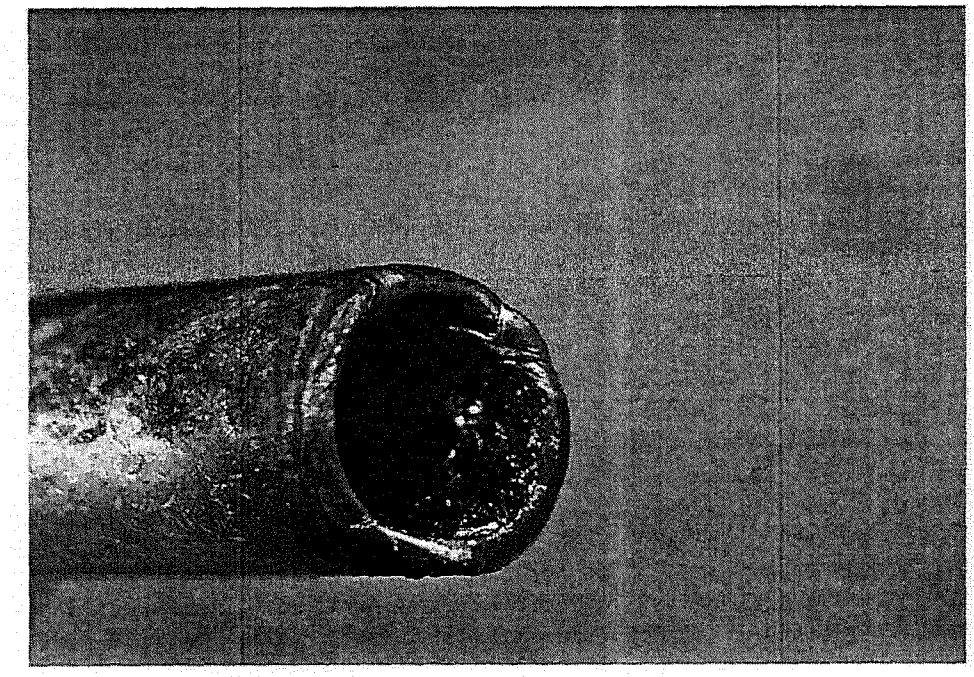


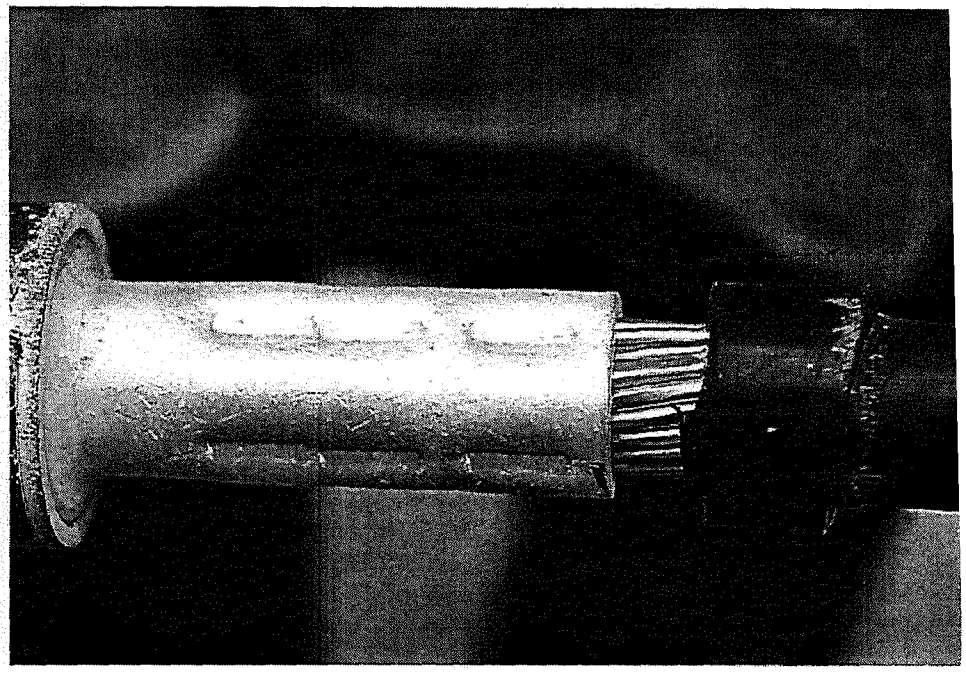


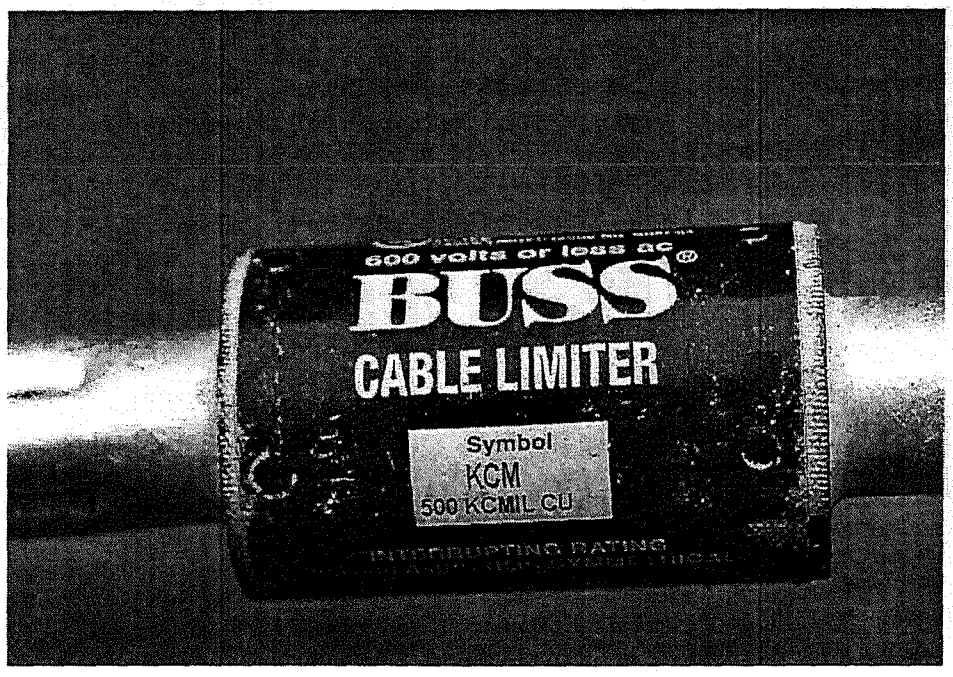


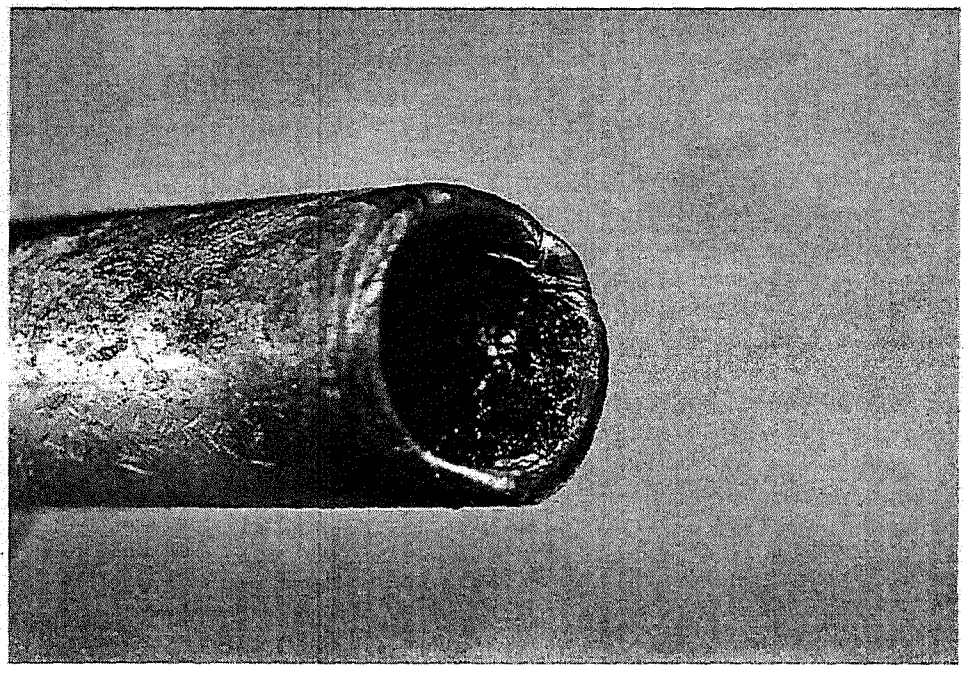

DEFENDER


SALISBURY






600 volts or less ac
BUSS
CABLE LIMITER
Symbol
KCM
500 KCMIL CU




DC
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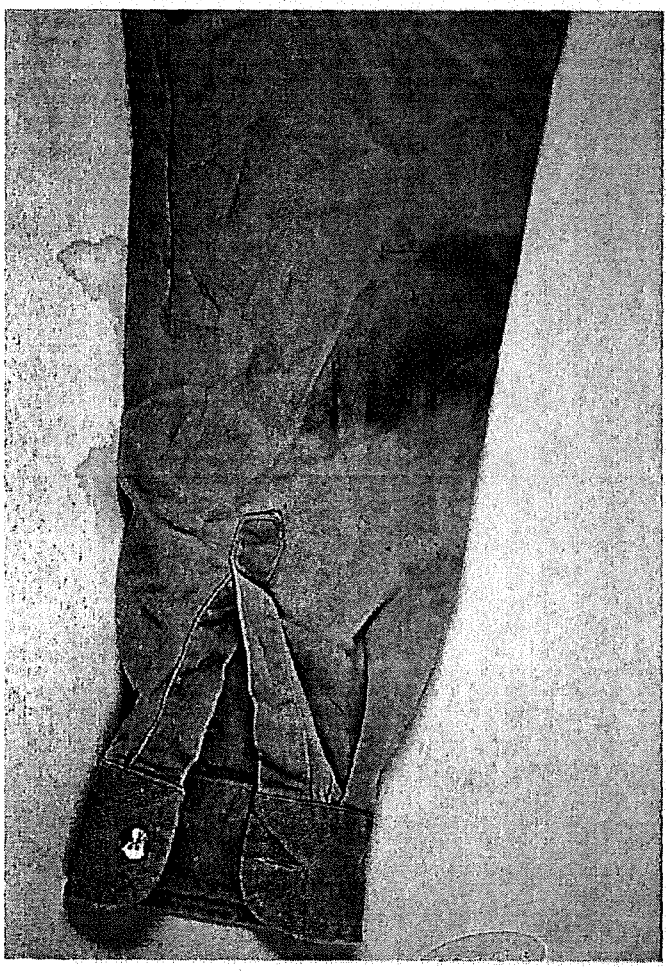
IDEAL
Vol-Test XL



Pre-job briefing

LG&E a PPL company

Date 5-23-13 Job # 3708484

Location 7th & Jefferson
WO 1319

Circuit # 1334, 1336 Voltage 13.8 KV Circuit on "One-Shot" ☑ Yes ☐ No

Conducted by Robert Yates Foreman/person in charge Robert Yates

Nearest medical facility University of Louisville Emergency contact # (502)627-3366 or 911

Part I — Provide work overview discussed with the crew:

Isolate old section of 480 V ties and pull out. Install 2 new sets of 500 mcm and connect in the manhole and in the vault. Phase in cable when connecting.

Part II — List recognized hazards and preventions discussed with the crew:

wear and use all proper PPE. Observe all hazards with the job and around the jobsite.

Discussion topic guide (check all that apply)

- ☑ Work procedures involved
- ☑ Bucket or line truck placement
- ☑ Material handling and rigging
- ☑ Special precautions needed
- ☑ Energy source controls (cut-outs, switches, reclosers, grounds, generator backfeed, "open points")
- ☐ Grounding (when necessary)
- ☑ Personal protective equipment (PPE)
- ☑ Observer responsibilities
- ☑ Interruptions and distractions
- ☑ Echo protocol
- ☑ Cover-up required
- ☑ Assignment of work tasks
- ☑ Traffic control requirements
- ☑ Public safety precautions
- ☐ Utility locates (marked/unmarked)
- ☐ Environmental issues
- ☑ Identify other work groups in area
- ☑ Conditions that may change during the day
- ☑ Confined-space entry procedures
- ☑ Minimum approach distance
- ☐ Excavation and trench hazards

Additional comments and suggestions:

Each of the following crew members has been included in this discussion involving the potential risks of the works at this location and understands the necessary precautions to ensure the safety of everyone involved:

Signature	Employee #	Signature	Employee #
	10928		26575
	27020		27253

FJB1111001

Matt Bawley

- Arrived at Job site. a
- Robert performed job briefing and discussion
- Set up cones Tripod 3 signs
- Opened Manhole 3 ~~set up~~ Cable taxis ~~spread duct~~
  while Seneca got in the hole
- Seneca worked the whole while we pulled 2
  sets of Secondary Cable
- Closed hole when finished and moved job
  site back to the manhole to the East.
- Set up Cones Tripod and signs.
- Seneca and I worked in manhole
  to remove Bundy Molds And then
  Reconnected Secondary Cables to ~~remove~~
  Eliminate Molds
  Mr Scott Seneca ~~[illegible]~~ went in Vault
  Marked both sides of the cable with phase
  tape then Cut the Cables and covered the hot
  ends in order to kill all the cable headed
  West.
- Closed Man hole to return to vault
  to make The Secondary cable hot again.
- Opened Vault, Went down, gathered
  crimps fuse limiters and getorgun 3 torch 3
  to ~~er~~ Complet the job.
- Uncovered the black phase on both sides
- Wiggy'ed black Cable to the west. installed fuse limit

Vissy

(1)

And stripped the other cable to make connections.
- When tried to make connections cable
fried up.

(2)

Park E-2 Vault

Robert Yates

- Arrived at the jobsite around 8:15 am.
- Wrote out a job briefing and had a 10 min discussion with the crew about the job. Crew included Yates, Newton, Bewley, and Underwood.
- We went over the job which included de-energizing the 480v tie between Park E-2 and the Juvenile Vault. Cutting out and replacing a section of cable.
- Discussed the hazards involved, air testing manholes and vaults, using all required PPE and testing equipment.
- Set up jobsite with cones and signs.
- Opened Juvenile vault and the manhole across the street from Juvenile vault.
- Installed 2 new sets of 500 mcm secondary from the manhole to the vault.
- De-energized the 480 v tie between vaults by cutting cables in each vault.
- Tested cables in 2 manholes to verify cables were de-energized.
- After testing was complete we removed burndy molds and crimped the dead cable back together.
- Mike Byrum's crew re-energized the 2 sets of cable at the Juvenile Vault back to the Park E-2 vault.
- Seneca, Scott, & Matt worked in the vault and Yates was the top man.
- We talked about the proper steps to reconnecting the 2 sets back together.
- Seneca verified with a wiggy that the cables had voltage both ways.

2)

- I heard a bang and fire coming out of the vault.
- I yelled to see if everyone was fine but it was 20 or 30 sec. before there was any response.
- All 3 guys came out of the vault and seemed to be fine.
- Seneca showed me his arm, which was burned, and I called Neal Purvis at 12:42 pm to inform him about the situation.
- Neal took Seneca to the University of Louisville for treatment.
- We completed the work shortly after the accident.

(3)

SCOTT UNDERWOOD

- Arrived to job on Jefferson.
- Did job briefing and discussed job.
- Popped manhole lid on Jefferson accross from juvenille vault.
- Set up tripod and put up cones in work area.
- Seneca went into manhole and began to snake ducts going south to juvenille vault.
- He pulled back out snake putting mule string in conduit and did the same for the next duct.
- I helped pull of winch line to pull in new cable.
- We pulled in 2 sets of 500 copper secondary.
- We closed up manhole and went to Parkeasy vault.

Seneca, Matt & me

- went down into vault to cut the 480v tie between Parkeasy vault and Juvenille vault.
- we taped each side of cable and cut it and immediately put fingers on each end.
- Once finished we came out of vault.
- we set up and popped manhole infront of Parkeasy vault.
- Seneca and Matt went down to remove old burndy moles and make straight

- I worked the top of the hole for a few minutes
- Then went and got an extra air monitor from Tyrone Dorsey to go back down into Parkeasy vault to hang new racks for the 480 v tie we was working on
- Then matt and Seneca came down while I was finishing up the racks
- They began to check the cables with the wigi
- Robert told us that Mike Byrums crew had made 2 [redacted] cables hot to us.
- Seneca and Matt started using the wigi [redacted] and I was picking some stiff up off of the floor
- They asked me to [redacted] help and hold a cable.
- We made sure both cables were hot with the wigi
- We put fuse limiter on my cable and slid tube on
- when we went to tap both cables together thats when the explosion occured
- [redacted] Covered back up both ends and came up out of vault.

(4)

SENECA NEWTON

- Arrived downtown around 8:30 AM
- Went over job briefing
- Read job briefing & signed it
- Set up jobsite, cones, tripod, arrow board & sign
- One crew is set up at juvenile vault and our crew is set up at manhole
- Pulled ~~new cable~~ 2 new sets of cable from manhole to vault
- Put phase tape on new cable
- Got out of manhole & closed it up
- Got back in manhole because the crew wanted to phone & phase the cable
- Cut off phase tape and phone the cable out to get phases that the crew in the vault wanted
- Got out of manhole
- Set up at Park EZ vault (tripod, cones, barricades)
- Went down in vault
- Found two sets of cable, marked cable on each side with phase tape, once that was done we proceeded to cut the cable one at a time & put fingers on them.
- Got out of vault
- Waited on the othe crew to cut the cable ~~#~~ in the other vault to kill the cable between Juvenile vault & Park EZ vault
- ~~Went~~ Set up at one manhole in front of Park EZ vault
- Found two sets of cable that we were working on, we cut the burndy moles out & put straight crimp on them with a shrink sleeve, we did one phase at a time so nothing would be out of phase
- Finished the work in our manhole
- Got out of manhole
- Waited on other crew to finish up in the other manhole

- once they were done, they moved to the juvenile vault & we went down in the parkEZ vault
- the other crew made 1 phase out of each set hot coming from the juvenile vault to the parkEZ vault.
- So we hot 2 hot legs in the ParkEZ vault, we had out PPE on, I did not have my shirt buttoned on the sleeves, we found the hot legs with a voltage indicator so we know which legs are hot.
- Both phases that we had were the black ones, one on each set
- On the phases we had, just on the black ones we had to put fuse limiters on both phase, the reason why we had to is from a previous failure
- Proceeded to put both black cables together and ~~we~~ that was when we had the explosion and my forearm got flashed
- got out of vault & went to hospital

Ohmmeter	-	A meter used to measure resistance (ohms).
Ohm's Law	-	The law that relates current, voltage, and resistance: voltage is equal to current times resistance (E = IR).
Parallel (in parallel)	-	Connections that provide alternate paths for current to follow.
Phase-to-phase line check	-	A check of power lines that is done by checking each individual line against every other line in the group.
PMMC (permanent magnet - moving coil) arrangment	-	A type of meter movement consisting of a coil of wire and a permanent magnet and activated by current flowing through the coil.
Resistance	-	The opposition offered by a body or substance to the passage of electric current.
Resistor	-	A component capable of providing resistance to the passage of current.
Series (in series)	-	An arrangement of the parts or elements in an electrical circuit in which the current passes through each element without branching off.
Shunt resistor	-	A resistor that joins two points in an electrical circuit so as to form a parallel or alternative path through which a portion of the current may pass.

The recording voltmeters are left to record changes in voltage levels over a specific period of time. When the lineman returns to check the readings, he uses an indicating voltmeter as a final check to make sure that the recording voltmeters are accurate. Then, the readings on the recording voltmeters' paper charts are checked. (The action to be taken if the readings show a voltage problem is beyond the scope of this program.)

4.2 Using a Phasing Tool to "Phase Out a Corner"

A common use of a phasing tool is to measure the potential difference between sets of primary conductors to see if the phases match. This type of measurement is essential whenever two sets of primary conductors are to be connected without interrupting service to customers. The example described in this section shows how a phasing tool can be used to match two sets of three-phase primary conductors at a utility pole. This job is often referred to as "phasing out a corner." As shown in Figure 4-2, one set of three-phase primaries crosses over the top crossarms of the utility pole, and the other set terminates at the lower crossarms.

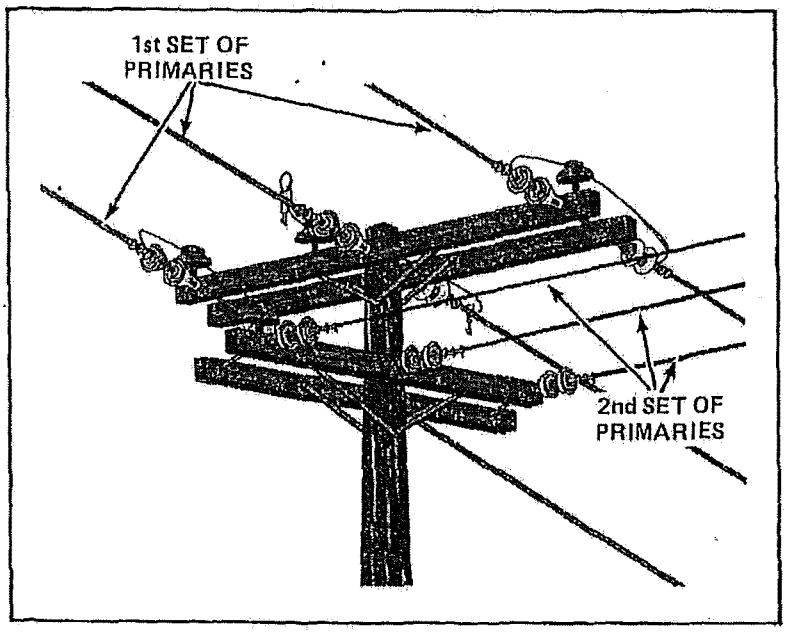


Figure 4-2. Two Sets of Three-Phase Primaries at a Utility Pole

The conductors in this example are two three-phase primaries energized at 13.2 KV. The potential difference between any two phases in the same primary or between any two unmatched phases of different primaries is the full 13.2 KV. The potential difference between two matched phases is nearly zero. Matched phases with a potential difference near zero can be connected safely, but the connecting of two unmatched phases could result in a dangerous short circuit. Phases are often labeled on a pole. However, conditions may have changed since the labeling, so a phasing tool should be used to test the conductors before any connections are made.

Before a phasing tool is used in the field, it should be inspected to make sure that it is in good condition. Particular attention should be paid to the condition of the cable that connects the probes. If there are signs of cracking, chafing, or other indications of wear, the device may be unsafe to use.

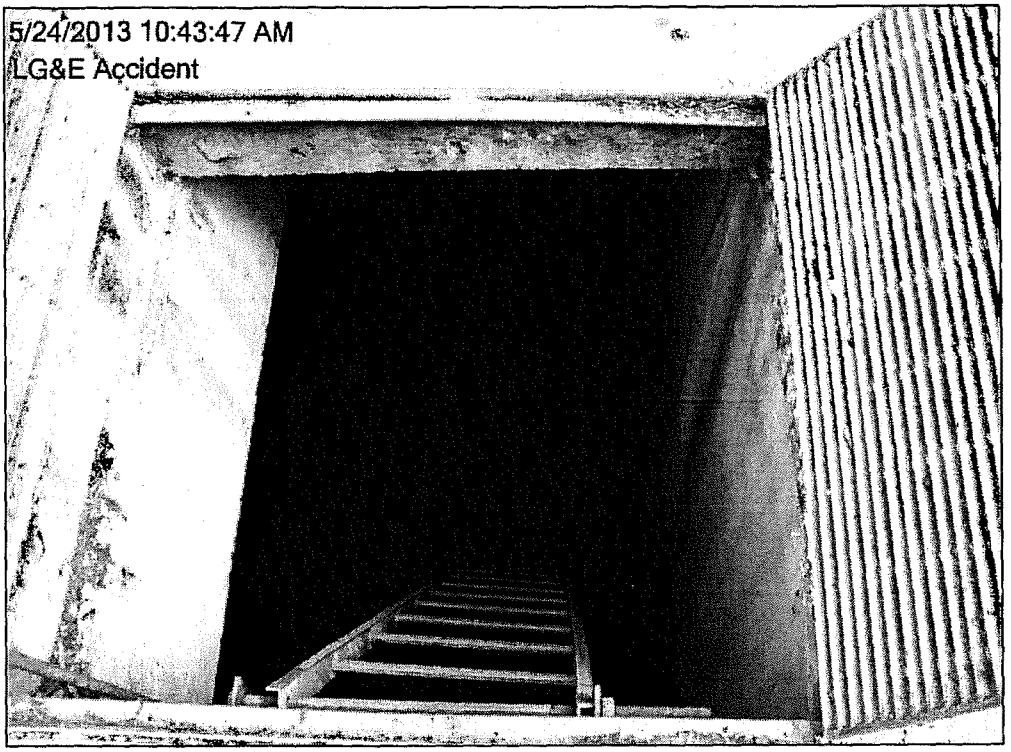
The first step in using a phasing tool is to test it to make sure that it is working. Also, each phase of the two sets of primaries to be connected is tested to make sure that it is energized. First, the probes of the phasing tool are hooked between the first two conductors of the same set of primaries.

If the phasing tool is operating correctly, and if the two phases being tested are energized, the phasing tool should read the full potential difference of 13.2 KV. The procedure is then repeated by hooking the phasing tool between the first conductor and the third conductor of the same primary. If the phasing tool reads the full potential difference of 13.2 KV between these two conductors, then this first set of primaries is energized.

The procedure is then repeated for the conductors of the second set of primaries. If the phasing tool indicates a reading substantially less than 13.2 KV between any two conductors of the same primary, there may be a problem that will prevent the two sets of conductors from being matched and connected.

Attachment B

KPSC Photographs of Incident Site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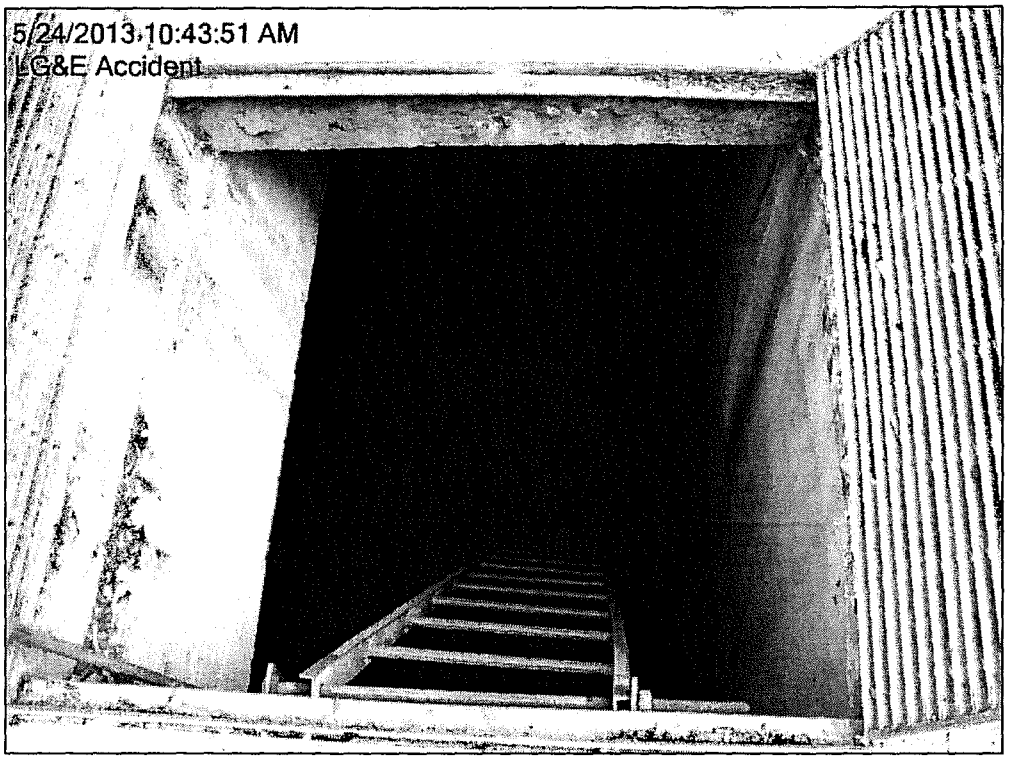
LG&E Accident

#1


5/24/2013 10:43:51 AM
LG&E Accident

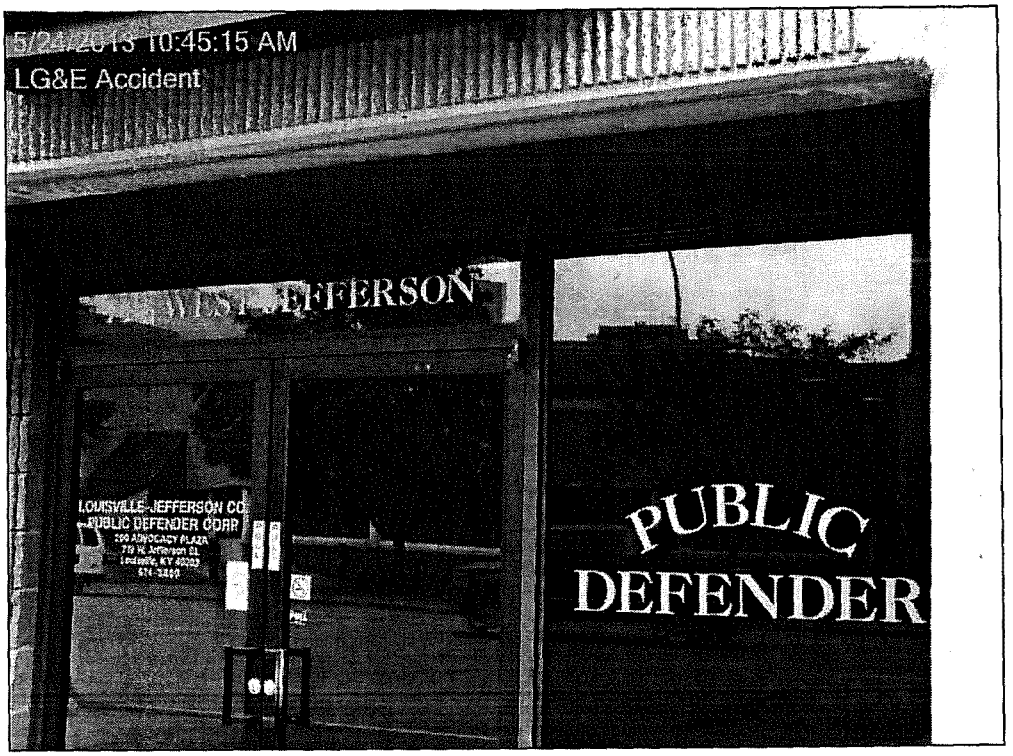
#2


LG&E Accident
5/24/2013 10:44:02 AM

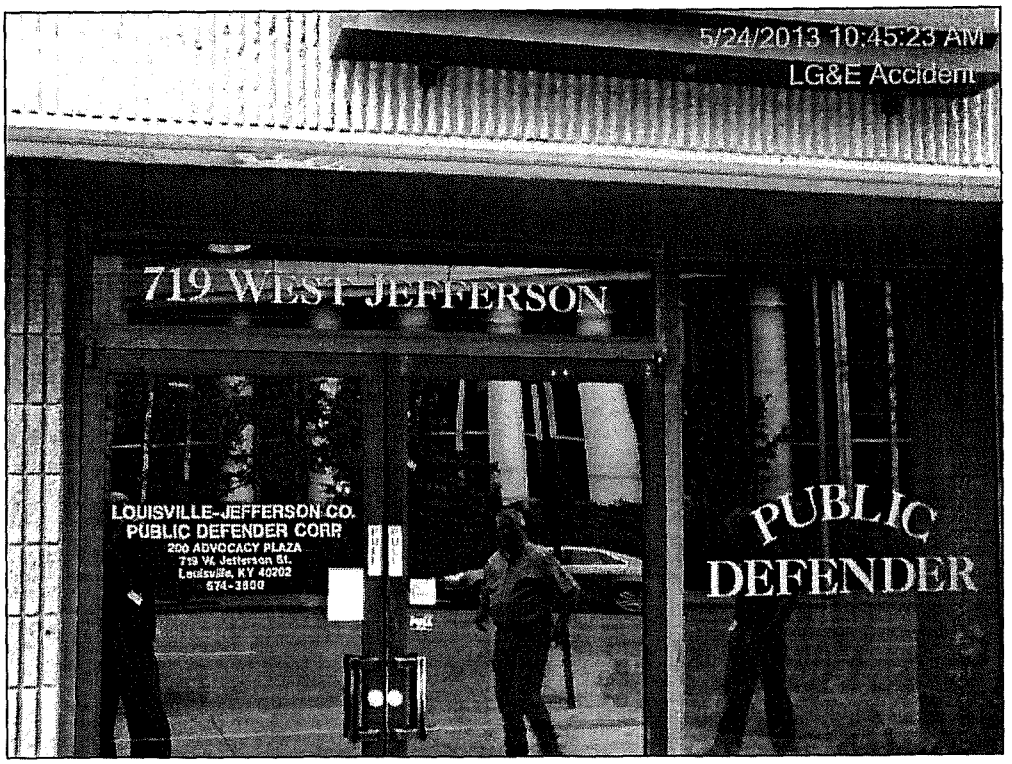
#3


LG&E Accident
5/24/2013 10:44:07 AM

#4


5/24/2013 10:45:15 AM
LG&E Accident
PUBLIC
DEFENDER

#5


5/24/2013 10:45:23 AM
LG&E Accident
719 WEST JEFFERSON
LOUISVILLE-JEFFERSON CO.
PUBLIC DEFENDER CORP
200 ADVOCACY PLAZA
719 W. Jefferson St.
Louisville, KY 40202
574-3800
PUBLIC
DEFENDER

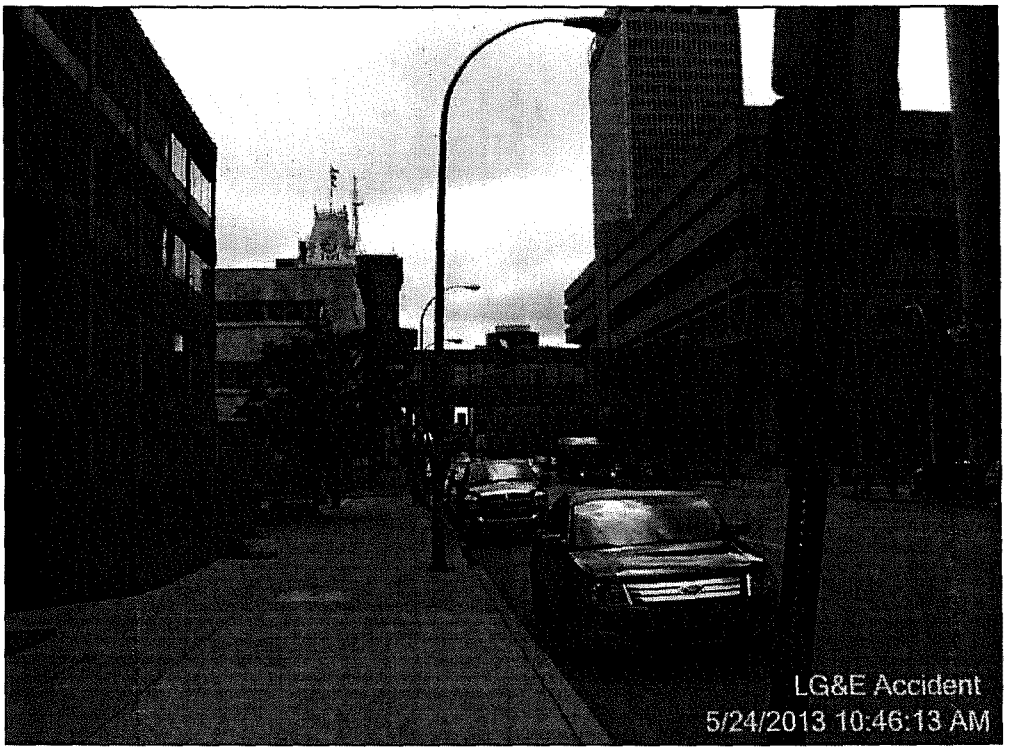
#6


5/24/2013 10:45:42 AM
LG&E Accident

#7


PUBLIC DEFENDER
LG&E Accident
5/24/2013 10:46:03 AM

#8


LG&E Accident
5/24/2013 10:46:13 AM

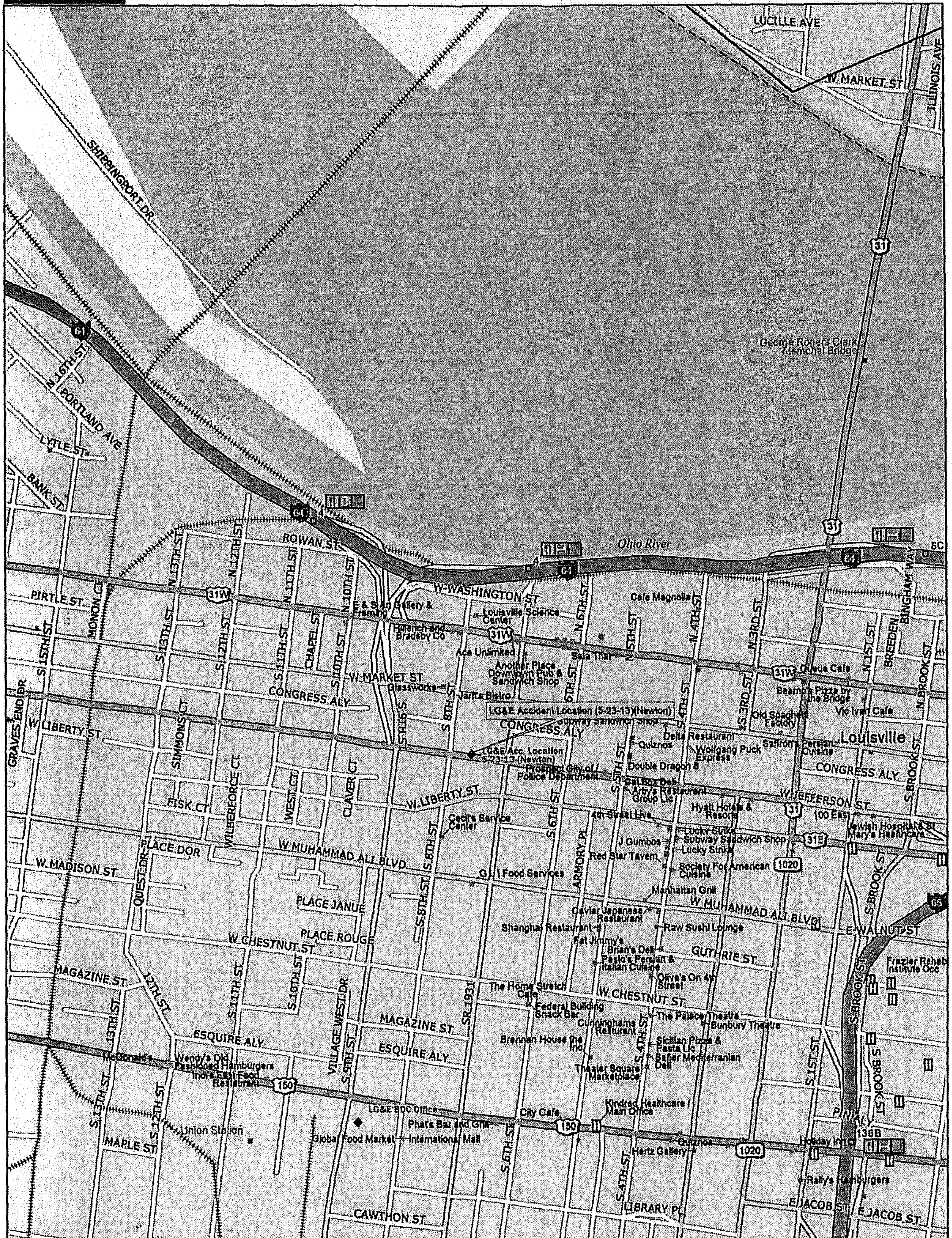
#9


LG&E Accident
5/24/2013 10:46:21 AM

#10

Attachment C

KPSC Map of Accident Location



Data use subject to license.

TN
MN (4.8°W)

Scale 1 : 12,800

1" = 1,066.7 ft

Data Zoom 14-0

Ed Staton
LG&E and KU Energy LLC
220 West Main Street
Louisville, KENTUCKY 40202