

COMMONWEALTH OF KENTUCKY
BEFORE THE ENERGY REGULATORY COMMISSION

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In the Matter of

THE NATURAL GAS LEAK INCIDENT ON LOUISVILLE
GAS & ELECTRIC COMPANY'S GAS DISTRIBUTION
SYSTEM AT VINE GROVE ELEMENTARY SCHOOL,
HARDIN COUNTY, KENTUCKY

CASE NO. 7775

O R D E R

On August 23, 1979, a natural gas leak was discovered at the Vine Grove Elementary School in Vine Grove, Hardin County, Kentucky.

On August 28, 1979, the Commission received telephonic notice of this incident from Louisville Gas & Electric Company.

On October 25, 1979, a Commission staff inspector completed his investigation of this incident and submitted his Report (Appendix "A").

On November 13, 1979, the Report was forwarded to Louisville Gas & Electric Company with a request that a response be submitted within twenty (20) days.

On December 7, 1979 the Commission received the December 6, 1979 response of Louisville Gas and Electric Company (Appendix "B").

The Commission, having considered the matter and being advised, on its own motion ORDERS that this matter be and it hereby is set for hearing on April 10, 1980 at 10:00 A.M. Eastern Standard Time in the Commission's Offices at Frankfort, Kentucky.

It is further ORDERED that Louisville Gas and Electric Company shall appear at the scheduled hearing and present testimony relative to this matter.

Done at Frankfort, Kentucky, this 19th day of March, 1980.

ENERGY REGULATORY COMMISSION


For the Commission

ATTEST:

Secretary

R E P O R T

TO: John T. Smither, Director
Division of Engineering *JTS*

THRU: E. Scott Smith
Chief Engineer, Gas Section *ell*

FROM: R. E. Bruflat
Chief Utility Inspector

SUBJECT: Investigation of Gas Leak Incident on Louisville Gas & Electric
Company (L.G. & E.) System at Vine Grove, Hardin County,
Kentucky Elementary School (School)

DATE: October 25, 1979

With the recent filing of L. G. & E.'s federal D O T Leak Form Report (DOT F 7100.1) and the receipt of additional information, this finalized Report can be written with the necessary overview.

Subject incident was mishandled at one level in L. G. & E.'s Natural Gas Division (Natural Gas). Certain aspects reflect the need for more effective implementation of L. G. & E.'s system "Emergency Plan" and the lack of periodic gas odorization checks. These communication and training problems have surfaced in prior investigations of incidents on L. G. & E. gas systems, but this Report will outline only those relative to subject incident.

The initial indication of the natural gas leak at the School occurred on Thursday, August 23, 1979, when an employee flicked an electric switch on a wall box in the School's kitchen. There was an explosive blast involving a limited area. The School Principal, Warden Thomas, notified his maintenance people at Elizabethtown (They serve the Hardin County School District from one centrally located facility). Mr. Patterson, Hardin County School Service Supervisor, promptly investigated and attributed the explosion

to electrical problems. On the following morning, Friday, August 24, 1979, Mr. Thomas, School Principal and L. G. & E. the gas company, were notified that there was a gas problem at the School.

The attached sheets -1- and -2- are copies of L. G. & E. records of their notification and response to this incident on 8-24-79 and 8-27-79. Mr. Thomas signed and received a copy of the L. G. & E. notice/authorization from L. G. & E. Employee Cain at 11:45 on 8-24-79 (See bottom of attached Sheet -1-).

There reportedly was some misunderstanding, and/or incomplete directions regarding the evacuation of the School. In the article on attached Sheet -3- State Fire Marshall, Mr. Tom Nickle, clarifies what should have been done; both at the direction of the School officials and the insistence of L. G. & E. service people. Mr. Nickle's office received its notice of the incident from the Vine Grove Police Department on Saturday morning, August 25, 1979.

This Commission received its telephonic notice at 9:30 A.M., Tuesday, August 28, 1979. The U.S., DOT, OPSO in Washington, D. C. (DOT Data Center) received their telephonic notice at 11:15 A. M. , Tuesday, August 28, 1979.

My investigation included interviews with School officials: Principal Warden Thomas, his secretary Mrs. Kizer and Hardin County Superintendent Charles Akins. My repeated interrogation revealed that they were pleased with L. G. & E.'s response and handling of the incident; but at no time prior to, or during, the incident did they detect--or have reported to them the odor of leaking natural gas. All tests for and concentrations of natural gas were made with various combustible gas indicating (CGI) instruments.

In my investigative contacts with L. G. & E. official representatives (Mr. Don Deering, Assistant Superintendent of Natural Gas; Mr. Bill Neblett, Chief Gas Engineer and Mr. Fred Lutz, Accident Investigator) a historic pattern of service call odorization checks was established and indicated on maps to show the relative location to the School. There were no records of the periodic checks for proper odorant level. Recent immediate area checks and the area service call records, as mapped, indicate that the gas in the main serving the School was adequately odorized.

Attached as Sheets -4- and -5- are pages 15 and 59, respectively, of L. G. & E.'s "Gas Emergency Procedure" ("E" Plan) manual on file with this Commission. The management information requirement in item 9 on page 15 could be interpreted as dependent upon the on site service supervisor's definition of an emergency. The recently revised regulation CFR-192.615 under the Natural Gas Pipeline Safety Act deals in detail with operator requirements that should have made the School situation readily recognizable as an emergency. Sheet -5- (page 59) from L.G. & E.'s "E" Plan lists some outdated information. The undersigned has previously been informed that the L. G. & E. "E" Plan is being updated, and this exemplary page is being used only to cite the importance for some diligent, continuing update activity.

A review of the above, my notes, the regulations and other information on file has led to the following determinations:

1. That L. G. & E. has violated Section CFR191.5 "Telephonic notice of certain leaks."
2. That L. G. & E. has violated Section CFR192.615 Emergency Plans "(b) Each operator shall - (2) train the appropriate operating personnel to assure that they are knowledgeable of the emergency procedures

and verify that the training is effective." And (d) -- outlining the required education program pursuant to this section.

3. That L. G. & E./ Natural Gas has violated 807KAR50:035 Gas Section 6. Odorization (4) Each utility shall make periodic checks to determine that proper level of odorization is maintained and keep records of same.

4. That L. G. & E. has been lax, or lacks adequate staff, to properly and periodically update their Emergency Plan and to implement related requirements.

From the above determinations, it is recommended that L. G. & E. be sent a copy of this Report along with a request for detailed responses to items 2 and 4 of the above findings:


It is further recommended that L. G. & E. be cited for the following violations:

1. Failure to make prompt and proper telephonic notice of this School incident (CFR191.5).

2. Failure to make periodic checks to determine and to keep records of proper odorization level (807KAR50:035 Gas Section 6).

It is further recommended that L. G. & E. be ordered to show cause, if any they can, as to why this Commission should not fine L. G. & E. according to law for these cited violations.

Respectfully submitted,


R. E. Bruffat
Chief Utility Inspector

REB/eag

Form SD 398

CUSTOMER SERVICE LINE REPORT FOR GAS INSPECTION SECTION

Address 1st Street Vine Grove Date 8-24-79

Customer's Name Vine Grove Elementary Phone [Redacted]

Property Owner's Name Hardin County Board of Ed. Phone [Redacted]

Property Owner's Address 110 South Main Elizabethtown

Class of Leak Found (1) (2) (3) (Circle one) Bud Patterson

Notice of Gas Leak Card Number 1-1564 Card Returned by You (Yes) (No)

If No, Person Card Left With -

Location Where Card Was Left -

Company Meter Number from One Gas Meter, If Available 234-118-52220

Number of Gas Meters Involved 1

House Line Test Meter (M) Air (A) None (N) Leaks (L) O.K. (O)

Service Box Showing (Yes) (No)

Other Remarks Customer's street line was leaking disconnected & plugged service at the house, & told customer to call plumber

Employee Name and Number Cain - 70

No 1-1564

To: LOUISVILLE GAS AND ELECTRIC COMPANY (Please Print)

Hardin County Board of Ed. receiving gas service at 1st Street Vine Grove

I, Bud Patterson, acknowledge receipt of notice of a gas leak and recognize my responsibility for taking corrective action. I request that one of the following be done, as indicated:

LEAVE SERVICE OFF. You will be notified when repairs are completed, so that you can inspect the facility and reinstate service.

PLEASE RESTORE SERVICE THROUGH A TEMPORARY SUBSTITUTE SERVICE LINE. I request that you provide a temporary substitute service line for not more than 15 calendar days; during which period I will have the necessary replacement or repairs made. Upon completion of such replacement or repairs, I will call you to inspect the piping and make the required connections. I agree to pay \$20 for the installation and removal of this temporary service line, and assume full responsibility for any accidents arising therefrom; and will hold the Company harmless for all occurrences arising out of the installation or maintenance of said temporary service line not caused by the Company's sole negligence. I also acknowledge that if these conditions are not met, gas service may be discontinued without further notice.

I have employed a qualified person to perform the work whose name and address is _____

Employee Cain - 70
Name and Emp. No.

Bud Patterson
Customer Signature

Date and Time 8-24-79 - 11:45

Date 8-24-79

DISTRICT SYSTEM 2201 597
 ADDRESS First Street
 CITY Vine Grove
 NAME Vine Grove

SURVEY NUMBER _____
 DATE OF DETECTION 8-29-79
 TIME 11:30 A.M.
 BY Cain

- LEAK OCCURRED ON
 (1) MAIN
 (2) COMPANY METERING OR REGULATING FACILITY
 (3) SERVICE - COMPANY
 (4) SERVICE - CUSTOMER
 (5) CUSTOMER METERING OR REGULATION

- CAUSE OF LEAK:
 (7) CORROSION
 (8) DAMAGE BY OUTSIDE FORCES (IDENTIFY)
 (9) CONSTRUCTION DEFECT
 (10) MATERIAL FAILURE
 (11) OTHER

METHOD OF REPAIR:
 (12) CLAMP
 (13) REPLACE PIPE
 (14) REPLACE FITTING
 (15) RELINE PIPE
 (16) WELD SLEEVE
 (17) LUBRICATE VALVE
 (18) OTHER
 () INSTALL TEMP. SER.
 DATE OF REPAIR 8-29-79
 TIME OF START 11:30 A.M.
 TIME COMPLETED 3:30 P.M.
 DEPARTMENT (GAS DIST.)
 METER NO. 239118

PART THAT LEAKED:
 (19) PIPE
 (20) CAST IRON JOINT
 (21) DRIP
 (22) FITTING
 (23) METER
 (24) STOP
 (25) SWIVEL
 (26) REGULATOR
 (27) RELIEF
 (28) TAP CONNECTION
 (29) VALVE
 (30) OTHER

(31) CLASS OF LEAK (1) (2) (3)
 (32) PRESSURE (1) L (2) E (3) M (4) H
 (33) (34) YEAR INSTALLED 19() ()
 SIZE 2" MATERIAL (W) (CI) (PL) (ST)
 (BARE) (MILL WRAPPED)
 CATHODIC PROTECTION? (YES) (NO)
 ANODE INSTALLED? (YES) (NO)
 FURTHER ATTENTION REQUIRED? (YES) (NO)
 (40) CANCEL REPORT - NO LEAK FOUND
 REPORTED BY:
 (41) OPERATOR PERSONNEL
 (42) AGENCY CAUSING DAMAGE
 (43) CUSTOMER
 (44) POLICE
 (45) FIRE
 (46) PUBLIC
 (47) OTHER (Specify)

REGULATOR NO. _____
 ADDITIONAL INFORMATION customer's street
was looking in connection
to find a connection to the house
and customer to call of number.

SIGNATURE Cain

Form 107-B-700-Rev. 7/77

LCF Co., Inc.
 Form 134-B-355

CORRECTION ORDER

Address 1st Street Vine Grove No 670106

Name Vine Grove Elementary School

Date 8-29-1979 Time 11:30 A.M. Notified By: Walker Received By: Cain

Nature of Complaint: Code-1 LEAK no - 35613
Set. no - 5597
PAGE no - 87

Complaint Answered: Date 8-29-1979 Time M. By Whom: Cain

Conditions Found: Customer's street line was leaking & gas was getting in to lunch room wall.

Corrections Made: Ran temporary line & closed the gas turned off because of leak found on 4" valve on the customer's house line.
meter no - 239118 - 52220

Is Further Attention Required? No
 Work Completed: 8-29-1979 3:30 P.M. Notified By: Walker Received By: Cain

LCF Co., Inc.
 Form 134-B-355

CORRECTION ORDER

Address First Street Vine Grove No 670661

Name Vine Grove Elementary School

Date 8-27-1979 Time 2:00 P.M. Notified By: Walker Received By: Cain

Nature of Complaint: Code-1

Complaint Answered: Date 8-27-1979 Time M. By Whom: Cain

Conditions Found: Gas trapped under asphalt from gas leak on customer's street line

Corrections Made: cut out 2" valve on 2" main in front of school & found small leak on 1" line off on end of main. cut 2 x 5 hole out in rear school & replaced with 2" pipe. was used in connection & gas was trapped.

Is Further Attention Required? No
 Work Completed: 8-27-1979 3:00 P.M. Notified By: Walker Received By: Cain

Leaking gas closes school at Vine Grove

Associated Press

VINE GROVE, Ky. — Vine Grove Elementary School was closed yesterday because of a natural-gas leak, but Hardin County School Superintendent Charles Akins said there is a possibility classes could resume by tomorrow.

Akins said that if repairs cannot be completed by tomorrow, an alternative plan would be considered to enable 730 children to return to classes.

"My first knowledge of the leak was Friday morning," Akins said, "but it didn't appear to be serious."

"We turned off the gas Friday," Calvin Anderson of Louisville Gas & Electric Co. said. "The leak is the customer's responsibility, and it's up to their plumber or repairman to fix it," he added.

"They will not be having school there until the problem is corrected," Vine Grove Fire Chief Deward Lee said.

Tempers flare over delay in evacuating Vine Grove school

By BILL OSINSKI
Courier-Journal Staff Writer

VINE GROVE, Ky. — Accumulations of natural gas and parental concern have led to a potentially explosive situation on the issue of safety in the Vine Grove Elementary School.

Residual pockets of gas discovered Monday caused the evacuation of the 700-student school.

That followed an incident last Thursday when a cafeteria worker was singed by a spurt of flame from near a fusebox in the school kitchen. The cause was determined to be leaks in the natural-gas lines into the school.

The lines were capped Friday. But yesterday the aftershocks of the

Thursday incident and of the closing Monday were still being felt.

About 125 angry parents met with school officials last night and leveled questions at Hardin County School Superintendent Charles Akins.

Jim Hunt, one of the questioners, said he felt Akins made "a drastic error in trying to justify a flip of the coin. Why take a chance with a bunch of kids' lives?" Hunt said. "You can't assume anything in an emergency."

Another parent, who asked not to be identified, said he felt Akins was trying to shift any blame for the incident onto Louisville Gas & Electric Co. advisers and onto lower-level school officials.

Akins conceded that he "probably did what we know now." He also told the parents that Vine Grove Elementary School would probably not reopen this week. Officials had said earlier yesterday that the school will remain closed until repairs on the gas lines are completed, which may take several more days. Meanwhile, Vine Grove city officials and a deputy state fire marshal also were sharply critical of the Hardin County school system's handling of the situation.

"It should have been evacuated Thursday," said Tom Nickle, the fire marshal. He also said the school system was negligent in not notifying fire offi-

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evacuating Vine Grove school

cials of the problem as soon as it was discovered. "The county school superintendent should know the procedure."

It was also a mistake, he said, to hold classes on Friday and Monday.

"They should've stayed out," Nickle said. "That's the decision I would have made if I'd been called in here."

Akins said the problem that led to the explosion Thursday was misdiagnosed at first. The school's repairmen thought the cause was an electrical explosion because the flame seemed to come from the fusebox, he said.

However, there was a suspicion that a gas leak might be involved, he said, so

Louisville Gas & Electric Co. was notified the next morning.

Gas company inspectors found leaks in the main line coming into the school and shut it off, he said.

Warden Thomas, the principal at Vine Grove Elementary, said that once the leaks were discovered Friday, gas company officials advised him to evacuate the cafeteria area.

That was done, he said, and classes in three rooms near the cafeteria were also moved.

School officials said that after the main line was capped, they were advised by the gas company that it would

be safe for classes to continue until the 1:30 p.m. dismissal time.

Cal Anderson, an LG&E spokesman, said his firm's investigation of the incident is incomplete. However, the preliminary reports from the gas-company workers involved indicate that the company's advice to school officials was to evacuate the school on Friday.

Both Akins and Thomas said they relied primarily on the expertise of the gas company in decisions to open and close the school.

"We've done the very best we can under the advice we received," Thomas said.

INSTRUCTIONS FOR PERSON IN CHARGE OF
NATURAL GAS FACILITIES

-4-

Upon receiving notification of an emergency the person in charge will:

1. Obtain as much information as possible about the emergency.
2. Analyze the information and inform the Gas Dispatcher or others as to what extent to alert other key personnel as indicated on page 59.
3. Assume complete charge of the emergency, if it affects only the Natural Gas Department.
4. Check that necessary sections of the Emergency Organization Chart are properly staffed. (See page 7 for personnel who normally fill the Coordinator positions).
5. Check that a sufficient number of personnel are being notified and have the Office Coordinator to make a roster of all personnel reporting.. The roster should indicate their location and radio call number.
6. Determine the extent of the emergency and if it will affect the supply of gas to the system.
7. Consult with the Gas Dispatcher Coordinator as to the immediate gas requirements and decide if any curtailment will be necessary.
8. Consult with the Gas Distribution Superintendent as to what loads to curtail, if there is to be a curtailment.
9. Keep management personnel informed throughout the emergency.
10. Maintain contact with all key personnel in both gas departments.
11. Determine if it will be necessary to have supervisors schedule their personnel on a shift basis.
12. Make final decisions on all functions of each section.

LOUISVILLE GAS AND ELECTRIC COMPANY
INCORPORATED IN KENTUCKY

P. O. BOX 32010 LOUISVILLE, KY. 40232 PHONE 502 586-4215

VICE PRESIDENT-OPERATIONS

RECEIVED

December 6, 1979

DEC 7 1979

ENERGY REGULATORY COMM.
DIVISION OF ENGINEERING

Mr. John T. Smither, Director
 Division of Engineering & Services
 ERC/URC
 P. O. Box 615
 Frankfort, KY 40602

Dear Mr. Smither,

In response to your cover letter, dated November 13, 1979, to an investigation of a gas leak at the Vine Grove Elementary School that occurred August 23, 1979, the following comments are submitted. Although detailed responses to Items 2. and 4. in Mr. Bruflat's report were requested, additional comments will be made.

Commenting on Item 1. of the report, a copy of a memo, dated October 15, 1979, and signed by the Chief Engineer of the ERC, regarding telephonic notices, was forwarded to all Natural Gas Department Gas Distribution service sections (copy enclosed). Specific instructions were given to see that the memo was conspicuously posted and made a topic for discussion in subsequent weekly "Tail Gate" Safety Meetings as appropriate.

In response to Item 2. of the report, shortly after the revised 192.615 to part 192 was implemented, a program was initiated to train all departmental Gas Distribution personnel in emergency plan procedures. This was accomplished through training sessions, including formal classroom meetings and assignments of responsibility at the supervisor level. Updating and re-instituting these training sessions has been and will continue to be conducted since the Vine Grove incident. The training can be regarded as being effective.

In reference to Item 4. of the report, the LG&E Company gas emergency procedures is now in process of being up-dated and is expected to be ready for printing by the first week of January 1980. Distribution to company personnel and the Energy Regulatory Commission staff will be about February 15, 1980. Provisions to periodically up-date the procedures have also been made.

Louisville Gas and Electric Company

Mr. John T. Smither
December 6, 1979
Page 2

On the last page of Mr. Bruflat's report, reference is made to the lack of odorization checks and records keeping. Changes in this procedure have been made. Quantitative checks will be made at each odorant injection point every two weeks to confirm proper amounts of odorant being injected, and odorant levels will be monitored at two different points each week in each town or localized Gas Distribution system.

In conclusion, it would seem that a recommendation for a fine in the case of this incident would not be in the spirit of the rules, or consistent with recent Commission actions. Originally, the incident was not recognized by the authorities as a gas emergency, and it was not reported to LG&E until some twenty (20) hours after the occurrence. There was no serious injury or loss of property. I hope you concur in this conclusion.

Yours truly,

H. N. McGinnis

Vice President-Operations

HNMcGinnis/dsb