

**EXHIBIT F7  
STATION FORMS**

**THERMAL HOT WORK PERMIT  
PROGRAM**

**AND**

**DIGGING PERMIT**

**LG&E and KU  
220 WEST MAIN ST.  
LOUISVILLE, KY, 40202**

## LG&E and KU

### Thermal Hot Work Permit Program

Authored By:

\_\_\_\_\_  
Jeffery O. Gilbert, CIH

Approved By:

Manager, Corporate Health & Safety

\_\_\_\_\_  
Barbara Hawkins, RN

Date:

Effective Date:

\_\_\_\_\_  
December 22, 2011

Next review to be completed by:

\_\_\_\_\_  
December 22, 2014

(signed copy on file in Corporate Health & Safety office)

## *Table of Contents*

1. Purpose.....	1
2. Scope.....	1
3. Responsibility .....	1
4. Definitions.....	5
5. Thermal Hot Work Requirements.....	5
6. Thermal Hot Work Procedures .....	6
7. Special Precautions .....	7
8. Personal Protective Equipment.....	8
Appendix A: Example Thermal Hot Work Permit Form.....	9
Appendix B: Frequently Asked Questions about the Thermal Hot Work Program ....	10
Appendix C: Request for Location of Underground Facilities .....	12

## **Thermal Hot Work Permit Program**

### **1. Purpose**

The purpose of this program is to reduce or eliminate the potential for injury to people and damage to property that can result from fires or explosions that arise when thermal hot work is performed outside of a designated safe thermal hot work area.

This program establishes a permit authorization system to ensure that all hazards are evaluated and that appropriate safety measures and controls are taken prior to and during any operation involving open-flames or that produces heat and/or sparks.

This operating procedure is written in accordance with the Occupational Safety and Health Administration's (OSHA) workplace standard, 29 CFR 1910.252, Welding, Cutting and Brazing and the National Fire Protection Association (NFPA) code standard 51B, Fire Prevention in Use of Cutting and Welding Processes.

### **2. Scope**

This program is applicable to all LG&E and KU personnel and all contract personnel working at LG&E and KU-owned properties and other locations where LG&E and KU has control over the work to be performed.

### **3. Responsibility**

All employees have responsibility for ensuring compliance with this program, including suspending thermal hot work if conditions become unsafe. Specific responsibilities are:

- 1) The Corporate Health and Safety Manager shall ensure that:
  - a) the written Corporate Thermal Hot Work Permit Program is reviewed and revised, as necessary,
  - b) the Business Units are provided assistance in evaluating the applicability and implementation of this program, and
  - c) reviews of the program's effectiveness are conducted and documented.
- 2) Business Unit managers shall:
  - a) designate one or more individuals with responsibility for authorizing thermal hot work in areas not specifically designed for such processes,

- b) provide resources and enforcement toward the identification, implementation and evaluation of controls to protect workers potentially exposed to the hazards of thermal hot work in the workplace,
  - c) provide necessary support to ensure documentation of required record keeping activities, and
  - d) provide necessary supports to ensure employees attend annual training classes.
- 3) Health and Safety Specialists and Technical Training Consultants are responsible for:
- a) reviewing and approving, in coordination with departmental representatives, the locations where thermal hot work permits are required. This can be accomplished by either designating areas where permits are required or identifying areas where permits would, under normal conditions not be required,
  - b) maintaining a list of areas that are specifically designed for thermal hot work,
- 4) Supervisor and/or Team Leader are responsible for:
- a) ensuring that fire watches are properly trained,
  - b) ensuring that the proper fire fighting equipment is in working condition, and is available to standby personnel,
  - c) determining whether combustible materials or other hazards are present or are likely to be present in the work location,
  - d) periodically monitoring designated areas to be sure that conditions have not become unsafe for thermal hot work,
  - e) preparing the workplace by:
    - i) moving the work to a designated safe thermal hot work area or a location free of combustibles and potentially explosive atmospheres, or
    - ii) if the work cannot be moved, having the combustibles moved to a safe distance (a minimum of 35 feet) from the work area, or

- iii) having the combustibles properly protected against ignition, or
  - iv) ventilating the area to remove potentially combustible or explosive gases or dusts (**Note:** In areas where there is the possibility of a release of an explosive gas, continuous monitoring of the area with an explosive meter is required.), or
  - v) scheduling the thermal hot work during a time when combustible materials are not to be in the area.
- f) obtaining a thermal hot work permit from an issuing authority for any work that is to be performed outside of a designated safe thermal hot work area.
- g) ensuring that workers are provided with and use proper safety equipment, including personal protective equipment and fire extinguishing equipment.
- h) when required, designating a properly trained person to serve as a fire watch.
- 5) The Contractor Proponent will be responsible for ensuring that the duties of the Supervisors and/or Team Leaders are properly executed for tasks involving contractors performing thermal hot work.
- 6) The Issuing Authority shall:
- a) review the permit request and verify that all necessary precautions have been properly taken. If necessary, a visual inspection may be conducted prior to final approval.
  - b) verify that the buildings fire sprinkler system is in service, where applicable. Determine if the work area has any fire alarm detectors that need to be disabled to prevent false alarms, and appropriately disable only those devices that could be accidentally activated.
  - c) verify the location, start time and duration of the thermal hot work operation. A thermal hot work permit shall only be valid for the time duration identified. No thermal hot work permit shall exceed the requestor's scheduled shift period unless the requester receives a written approval from the Issuing Authority for an extension.
  - d) determine whether a fire watch is required for the thermal hot work operation.

- 7) The Fire Watch shall be a properly trained person designated by the individual or department requesting the thermal hot work permit, but shall not be the actual employee who is performing the thermal hot work operation.

Specific responsibilities include:

- a) having fire extinguishing equipment readily available and be trained in its proper use and limitations.
  - b) being familiar with facilities and procedures for sounding an alarm in the event of a fire.
  - c) correcting or stopping any conditions which may lead to a fire and reporting conditions to their department at the earliest opportunity. Attempting to extinguish fires appropriate to the available equipment and level of training, or otherwise activate the fire alarm system.
  - d) remain at the work site to monitor for smoldering fires while work is in progress and for at least one half hour following job completion. If the fire watch must leave the work site, all thermal hot work must stop.
- 7) Employees performing thermal hot work shall obtain proper authorization to perform thermal hot work operations via the THERMAL HOT WORK PERMIT and shall handle the equipment safely and use it so as not to endanger lives and property. The employee performing thermal hot work is also responsible for:
- a) ensuring full compliance with the requirements of this procedure.
  - b) being fully qualified to perform required thermal hot work and verify that their equipment and tools are in good working order.
  - c) using appropriate safety equipment, including eye and face protection, hand protection, body protection, head protection, hearing protection and respiratory protection, as needed.
  - d) avoiding thermal hot work operations where conditions ARE NOT SAFE.
  - e) stopping work when conditions change from those set when the work was approved. If the designated fire watch must leave the work site, operations shall cease and the operator shall remain at the work site for at least one half hour following job completion to monitor for fires.

#### 4. Definitions

**Designated Safe Thermal Hot Work Areas** are areas that have been designed and constructed for performing work involving open-flames or that produce heat or sparks.

**Facility Manager** is the senior manager responsible for the physical operations of the facility or his/her designee (i.e., a plant manager at a power generation station or a service center manager at an operations center).

**Fire Watch** is a person trained to monitor thermal hot work operations. The Fire Watch shall be present during the entire thermal hot work operation and are immediately available to extinguish a fire or take other effective action if needed.

**Thermal Hot Work** is any work using an open-flame, heat or spark-producing apparatus. Thermal hot work includes, but is not limited to, welding, cutting, burning, grinding, and any related heat-producing jobs that could ignite combustible materials or flammable atmospheres. **Note:** Bolt heaters, car thaw sheds, portable room heaters (where allowed) and thermal weatherization equipment are not considered thermal hot work and do not require permits under this corporate program.

**Thermal Hot Work Permit** is a special permit, issued by an issuing authority, which authorizes specified thermal hot work at a specific location and time.

**Issuing Authority** is a person trained and approved by the facility manager or Business Unit manager to issue thermal hot work permits.

#### 5. Thermal Hot Work Requirements

- 1) Routine thermal hot work operations shall be allowed without the requirement of a permit only in areas that have been designated as a SAFE THERMAL HOT WORK AREA.
- 2) In areas where it is not practical to move the work to a designated SAFE THERMAL HOT WORK AREA, thermal hot work shall only be permitted once the area is made fire safe by removing combustibles or protecting combustibles from ignition sources.
- 3) Thermal hot work operations are strictly prohibited under the following conditions:
  - a) in areas not designated as SAFE THERMAL HOT WORK AREAS where a proper thermal hot work permit has not been obtained;
  - b) in sprinklered buildings while such protection is impaired;



- c) in the presence of explosive atmospheres, such as mixtures of flammable gases, vapors, liquids, or dusts with air; on or in any drum, container or vessel that has not been properly cleaned to remove any possible explosive atmospheres that can develop inside from residual contents; or
- d) in areas near the storage of large quantities of flammable or combustible materials that can readily ignite. Note: In coal yards and other coal storage areas, as well as when working on or within 35 feet of coal handling equipment, a thermal hot work permit will always be required and the coal must be adequately protected.

## 6. Thermal Hot Work Permit Procedures

- 1) Before a thermal hot work permit is approved and issued, the department or individual requesting the permit shall verify that:
  - a) all thermal hot work equipment to be used is in satisfactory condition and in good repair.
  - b) any combustible materials such as paper, wood, textiles, or coal on the floor are swept clear for a radius of 35 feet or protected against ignition by other means. Floors constructed of combustible materials are properly protected by either wetting the surface or covered by fire-resistant shields. Where floors have been wetted down, personnel operating arc welding or cutting equipment shall be protected from possible shock.
  - c) all combustible materials are relocated at least 35 feet from the work area. Where relocation is not practical, the combustible materials shall be adequately protected.
  - d) openings or cracks in walls, floors, or ducts and grating surfaces within 35 feet of the work area are tightly covered to prevent the passage of sparks to adjacent areas. Where thermal hot work is done near walls, partitions, ceilings or roofs of combustible construction, fire-resistant shields or guards are provided to prevent ignition.
  - e) if thermal hot work is to be done on a metal wall, partition, ceiling or roof, that precautions are taken to prevent ignition of combustible materials on the other side, due to conduction or radiation, such as relocation or covering the materials. If the combustible materials can not be relocated or protected, a fire watch shall be provided on the opposite side of the wall where the work is being performed.

- f) no thermal hot work is attempted on a metal partition, wall ceiling or roof having a covering, or on walls or partitions of combustible sandwich-type panel construction.
  - g) thermal hot work is not undertaken on pipes or other metals that are in contact with combustible walls, partitions, ceilings or roofs, if the work is close enough to cause ignition by conduction.
  - h) nearby personnel are suitably protected against heat, sparks, slag, etc.
  - i) where thermal hot work is to be done in close proximity to a sprinkler head, that the head is covered by a wet cloth to prevent activation. The cloth must be removed immediately at the conclusion of the thermal hot work.
- 2) The department or individual requesting the thermal hot work permit is responsible for designating a fire watch. The fire watch shall:
- a) have fire extinguishing equipment readily available and be trained in its use.
  - b) know how to activate the building's fire alarm system, if applicable, or who to notify in the event of a fire.
  - c) watch for fires in all exposed areas, and try to extinguish them first only when obviously within the capacity of the equipment available, or otherwise sound the alarm immediately.
  - d) monitor the work area for at least one half hour after completion of the thermal hot work to detect and extinguish any smoldering fires that may be identified.
- 3) Once the work area has been properly prepared, the department or individual requesting the thermal hot work permit shall complete the thermal hot work permit form (See *Appendix A* for an example of a thermal hot work permit, the Business Units may create their own form) and request final review and approval from an Issuing Authority. The requestor, Issuing Authority, Fire Watch (when required) and employees performing the thermal hot work shall sign and dated the permit. Once approved, the thermal hot work permit shall be posted in the area where the work is to be performed.

## 7. Special Precautions

- 1) When work is stopped for an extended period of time the equipment must be shut down and secured to prevent accidental release of sparks, heat or

flames. If the work stoppage will exceed the original duration time of the thermal hot work permit, the requester must notify Issuing Authority to have the permit extended or to request issuance of a new permit.

- 2) When thermal hot work is to be performed in a permit-required confined space or in conjunction with other permits or tags (such as required by the Lockout/Tag Out Program), all of the permits shall be marked so that they are linked to the original work order and to each other.
- 3) When the operation of equipment would render the area unsafe for thermal hot work, this equipment must be locked and/or tagged out in accordance with the Lockout – Tag Out Program. Both the lockout – tag out documentation and the thermal hot work permit shall be marked so that they are linked to the original work order and to each other.
- 4) Drums, tanks, containers or any vessel that may have contained chemicals or materials that when heated may produce flammable, explosive or toxic atmospheres shall be thoroughly cleaned and prepared prior to performing any thermal hot work on them.
- 5) Thermal hot work that must be performed on any utility piping used for the transmission or distribution of flammable gases or liquids shall only be performed by a crew qualified to make hot taps.
- 6) Contractors shall perform all thermal hot work procedures in accordance with this operating procedure or be able to demonstrate that they have a comparable procedure that meets or exceeds the requirements of this operating procedure.

## **8. Personal Protective Equipment**

Personal protective equipment for eyes, face, head, and extremities, respiratory protection and protective shields and barriers, shall be used and maintained in a sanitary and reliable condition. Selection of appropriate devices should be made in accordance with the Personal Protective Equipment Hazard Assessment Program.

# HOT WORK PERMIT

**BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED?  
IS THERE A SAFER WAY?**

This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Torch Applied Roofing and Welding.

<p><b>INSTRUCTIONS</b></p> <p>1. Firesafety supervisor:                  A. Verify precautions listed at right for do not proceed with the work.                  B. Complete and retain Part 1.                  (Part 1A is a copy for expanded hot work awareness).                  C. Issue Part 2 to person doing job.</p> <p>HOT WORK BEING DONE BY  <input type="checkbox"/> EMPLOYEE  <input type="checkbox"/> CONTRACTOR</p> <p>DATE: _____</p> <p>LOCATION/BUILDING AND FLOOR: _____</p> <p>NATURE OF JOB: _____</p> <p>NAME OF PERSON DOING HOT WORK: _____</p> <p>I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.</p> <p>SIGNED (Firesafety Supervisor/Operations Supervisor): _____</p>	<p><b>PART 1A REQUIRED PRECAUTIONS CHECKLIST</b></p> <p><b>03 09 09 05</b></p> <p><input type="checkbox"/> Available sprinklers, hose streams and extinguishers are in service/operable.  <input type="checkbox"/> Hot Work equipment in good repair.  <input type="checkbox"/> Requirements within 35 ft (11 m) of work  <input type="checkbox"/> Flammable liquids, dust, lint and oily deposits removed.  <input type="checkbox"/> Explosive atmosphere in area eliminated.  <input type="checkbox"/> Floors swept clean.  <input type="checkbox"/> Combustible floors wet down, covered with damp sand or fire-resistant sheets.  <input type="checkbox"/> Remove other combustibles where possible. Otherwise protect with fire-resistant tarpaulins or metal shields.  <input type="checkbox"/> All wall and floor openings covered.  <input type="checkbox"/> Fire-resistant tarpaulins suspended beneath work.  <input type="checkbox"/> Protect or shut down ducts and conveyors that might carry sparks to distant combustibles.</p> <p><b>Work on walls, ceilings or roofs</b>  <input type="checkbox"/> Construction is noncombustible and without combustible covering or insulation.  <input type="checkbox"/> Combustibles on other side of walls, ceilings or roofs are moved away.</p> <p><b>Work on enclosed equipment</b>  <input type="checkbox"/> Enclosed equipment cleaned of all combustibles.  <input type="checkbox"/> Containers purged of flammable liquids/vapors.  <input type="checkbox"/> Pressurized vessels, piping and equipment removed from service, isolated and vented.</p> <p><b>Fire watch/Hot Work area monitoring</b>  <input type="checkbox"/> Fire watch will be provided during and for 60 minutes after work, including any coffee or lunch breaks.  <input type="checkbox"/> Fire watch is supplied with suitable extinguishers, and where practical, a charged small hose.  <input type="checkbox"/> Fire watch is trained in use of equipment and in sounding alarm.  <input type="checkbox"/> Fire watch may be required in adjoining areas, above and below.  <input type="checkbox"/> Monitor Hot Work area for 3 hours after job is completed.</p> <p><b>Other Precautions Taken:</b> _____</p>
---	---

NOTE: EMERGENCY NOTIFICATION ON BACK OF FORM. USE AS APPROPRIATE FOR YOUR FACILITY.

PERMIT DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM/PM



F2630 (REV. 11/03)  
 PRINTED IN USA (11/03)  
 © 2003 Factory Mutual Insurance Company  
 All rights reserved.

# WARNING!

## HOT WORK IN PROGRESS WATCH FOR FIRE!

IN CASE OF EMERGENCY:

CALL: \_\_\_\_\_

AT: \_\_\_\_\_

# WARNING!



## **Appendix B: Frequently Asked Questions about the Thermal Hot Work Permit Program**

### **1) What is thermal hot work?**

Thermal hot work should not be confused with the practice of working on “live” (energized) electrical equipment, known in the utility industry as ‘hot work.’

Thermal hot work is any work using an open-flame, heat or spark-producing apparatus. Thermal hot work includes, but is not limited to, welding, cutting, burning, grinding, and any related heat-producing jobs that could ignite combustible materials or flammable atmospheres. **Note:** Bolt heaters, car thaw sheds, portable room heaters (where allowed) and thermal weatherization equipment are not considered thermal hot work and do not require permits under this corporate program.

### **2) Who can issue a Thermal Hot Work Permit?**

Only individuals, called Issuing Authorities in the corporate program, who have been authorized by one of the Business Unit managers and who have been properly trained can issue thermal hot work permits.

### **3) Can the Issuing Authority be the same person as the one performing the thermal hot work operation?**

An Issuing Authority can perform thermal hot work, however, they can not issue permits to themselves. A second person with authority to issue these permits must issue the permit. The purpose of this requirement is to ensure that all of the proper precautions have been taken prior to initiating thermal hot work.

### **4) Does the Thermal Hot Work Permit Program apply to shop areas?**

Shop areas are addressed in the written program. In most cases, the shops will be designed and maintained to make it safe to perform thermal hot work without the need for a permit. However, if combustibles are present employees must comply with the Thermal Hot Work Permit Program.

### **5) What does fire watch mean?**

A fire watch is an individual trained to monitor thermal hot work operations. The fire watch shall be present during the entire thermal hot work operation and be immediately available to extinguish a fire or take other effective action if needed. The Issuing Authority must determine whether a fire watch is required when assessing the work to be covered by the thermal hot work permit.

**6) Must the employee assigned fire watch duties stay at the job site or can he/she periodically check the work area?**

Fire watch must be maintained during the thermal hot work task and for at least a half-hour afterwards. The fire watch must stay at the job site but may be allowed to perform other duties (e.g. put tools away, clean up).

**7) Should a crew stop 30 minutes early at the end of the day or will the fire watch stay for 30 minutes on overtime?**

The supervisor should decide this on a case-by-case basis based on the urgency of the work. As stated earlier, fire watch can be maintained while clean up of the work site is being performed.

**8) What is considered clean?**

Elimination of flammable concentrations or potential concentrations of combustible dusts, gases, fumes, vapors, etc.

**9) What does the term 35' radius mean? What direction does that include?**

A 35-foot radius means 35 feet in every direction from the source of ignition. The distance does not extend beyond non-combustible walls, floors, or ceilings.

**10) Specify what it takes to contain hazard to avoid cleaning 35' radius?**

Move the work, move the combustibles, or cover or shield all potential combustibles in the 35-foot radius. The intent is prevent fires and make the work safer.

**11) Is wetting down an acceptable method of eliminating a fire hazard?**

Yes. However, where floors have been wet down, personnel operating arc welding or cutting equipment shall be protected from possible shock.  
1910.252(a)(2)(v).

**12) Who is responsible for ensuring that equipment needed to comply with the thermal hot work permit program is available when needed? Is it the proper type?**

Equipment needs should be evaluated by the departments performing the work. Needed equipment should be ordered through the normal procurement processes.

### Appendix C: Request for Location of Underground Facilities

**LG&E** C.E. & C.M. Dept

#### Request for Location of Underground Facilities Substation And Power Plants

Location: \_\_\_\_\_ Date Requested: \_\_\_\_\_

Description of Work To be Done And Specific Areas Involved:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date Work To Start: \_\_\_\_\_

Person requesting Location & Approval : \_\_\_\_\_

Location Checked and Approved by:

Cane Run Plant: \_\_\_\_\_ Date: \_\_\_\_\_

Mill Creek Plant: \_\_\_\_\_ Date: \_\_\_\_\_

Trimble County Plant: \_\_\_\_\_ Date: \_\_\_\_\_

Electric T & D: \_\_\_\_\_ Date: \_\_\_\_\_

Electric Underground: \_\_\_\_\_ Date: \_\_\_\_\_

Gas Department: \_\_\_\_\_ Date: \_\_\_\_\_

South Central Bell: \_\_\_\_\_ Date: \_\_\_\_\_

Other: \_\_\_\_\_ Date: \_\_\_\_\_

Specific Instructions (How Close To Dig By Machine/Hand)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date Permission Given to Dig: \_\_\_\_\_

Person Notified If Different Than Person Requesting Approval: \_\_\_\_\_