

Emergency And Disaster Preparedness

ELECTRICAL PERMITTING AND INSPECTIONS – Caused by Natural Disasters

This is necessary to protect the safety of Washington citizens and businesses and keep the impacts of natural disasters to a minimum.

This is meant to meet the requirements of the electrical law regarding electrical permitting and inspections. This will clarify what actions should be taken when an electrical permit and/or inspection is necessary because of possible damage to an existing electrical system caused by a natural disaster.

Requesting Inspections

L&I will accept an agency requested inspection from any government entity or electrical utility to inspect electrical systems that have possible damage caused by a natural disaster. The request may be made by L&I Agency Requested Inspection form (F500-025-000) or other document containing the information contained on Agency Requested Inspection form. The L&I form is available at all L&I offices or online at:

<http://www.lni.wa.gov/tradeslicensing/electrical/>

When an agency requested inspection is received, L&I will enter that request, in the form of a permit, into the L&I permitting system. There is no cost for this action. The L&I staff entering the permit information must be automatically requested and inspection of the electrical system. If the L&I computer system is not functioning, the staff person entering the inspection request must immediately deliver the inspection request information to the appropriate electrical inspector.

Inspection Process

The inspector will consider inspections for this type of work a high priority.

The intent of the initial inspection based on the agency request is to determine if the electrical system or a part of a system is safe to operate without repair. If the inspector determines that part or all of the inspected electrical system is safe, approval to operate the portion that is safe will be granted. This may require notifying the serving electrical utility of the approval for energizing the electrical service.

If part or all of an electrical system requires repair or reconditioning before it can be safely operated, the inspector will issue an appropriate correction report and require that:

- The unsafe portion is physically disconnected from the source of power or locked out and tagged out; and

- A normal electrical permit be purchased by the owner or an electrical contractor.

All further inspections of the electrical system will be conducted based on the normal electrical permit. Permit fees will be based on the hourly rate (time actually spent doing the inspection) or the normally appropriate fees, whichever is least.

Evaluating Water-Damaged Electrical Equipment

This section provides information on how to evaluate electrical equipment that has been exposed to water through flooding, fire-fighting activities, hurricanes, etc. Electrical equipment exposed to water can be extremely hazardous if reenergized without proper reconditioning or replacement. Reductions in integrity of electrical equipment due to moisture can affect the ability of the equipment to perform its intended function. Damage can also occur from other contaminants associated with water (e.g. chemicals, sewage, etc.). Ocean water and salt spray can be particularly damaging.

The inspector must use the guidelines below when evaluating water damaged electrical equipment (taken in part from National Electrical Manufacturers Association publication, 2006; and Underwriters Laboratory Katrina disaster information).

When equipment is reconditioned, the owner or electrical contractor must contact the equipment manufacturer and follow the manufacturer’s guidelines for reconditioning. A written copy of the reconditioning guidelines must be available for the inspector at the time of inspection. The manufacturer may recommend that the equipment be replaced instead of reconditioned.

The following table is based on the above paragraph and the requirements of National Electrical Code 110.11 that says, *“Unless identified for use in the operating environment, no conductors or equipment shall be located in damp or wet locations; where exposed to gases, fumes, vapor, liquids, or other agents that have a deteriorating effect on the conductors or equipment; or where exposed to extreme temperatures.”*

Equipment Type	Replace Equipment	May Be Reconditioned
Electrical distribution equipment		
Molded case circuit breakers	X	
Fuses	X	
Enclosed and open switches		X
Wrapped busway	X	
Unwrapped busway		X
Panelboards, switchboards, motor control centers		X

Motor control equipment

Adjustable speed drives
 Components containing semiconductors or transistors
 Electronically controlled or solid state contactors or starters
 Overload relays
 Manual or magnetic controllers

Replace Equipment	May Be Reconditioned
	X
X	
X	
X	
	X

Power equipment

Electronic trip units of low voltage power breakers
 High voltage circuit breakers (AC)
 Low voltage power circuit breakers
 Protective relays, meters, or current transformers
 Low, medium or high voltage switchgear

Replace Equipment	May Be Reconditioned
X	
	X
	X
	X
	X

Transformers

All dry type transformers
 Liquid filled transformers
 Cast resin transformers

Replace Equipment	May Be Reconditioned
	X
	X
	X

Wire and cable

Solid conductor (NM-B)
 Solid conductor (bare)
 Stranded conductor wire and cable
 Wire or cable suitable for wet locations (that has been completely submerged by water)
 Wire or cable suitable for wet locations (where ends have not been exposed to water)

Replace Equipment	May Be Reconditioned
Approve if not physically damaged	X
Approve if not physically damaged	X
X	X
X	X
	X

Note for wire and cable: Methods are available that remove moisture from the interior of the wire or cable by forcing the moisture out and by pressure (e.g. nitrogen or silicon injection, etc.). Such methods are acceptable reconditioning methods.

Wiring and protective devices

Arc Fault Circuit Interrupters and Ground Fault
Circuit Interrupters
Surge protective devices
Wiring devices (e.g. light switches, receptacles,
dimmers, etc.)

**Replace
Equipment**

X

X

X

**May Be
Reconditioned****Appliance and utilization equipment**

Appliances (e.g. washing machines, stoves,
ovens, refrigerators, etc.)
Utilization equipment (e.g. furnaces, air
conditioners, heat pumps, Etc.)

**Replace
Equipment**

X

X

**May Be
Reconditioned****Other devices**

Cable tray
Fire pump controllers

**Replace
Equipment**

X

X

**May Be
Reconditioned**

X

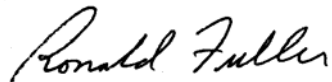
X

Luminaires (i.e. lighting fixtures)

Motors

X

Signaling, protection, and communications
systems



Ronald E. Fuller
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