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Restoring Electrical Service After a Flood

Flood Clean-Up Series #11

Joseph T. Ponessa, Ph.D., Extension Specialist in Housing and Energy

After a flood, your electrical system should be thoroughly checked and repaired by an electrician. If such service is unavailable, and you need to do your own repairing, proceed as follows:

Turn Power Off

1) Disconnect the main electrical power switch, and any other switches controlling pumps or outbuildings. If your main switch is located in the basement, be sure all flood water has been pumped out before you attempt any work on the electrical system.

   When touching any switches, stand on a dry board and use a dry stick or rubber gloves to pull handles.

2) Remove all branch circuit fuses, or place circuit breakers in "off" position to insure that power is off.

3) Disconnect all plug-in equipment, and turn off the switch at each piece of permanently connected equipment. Unscrew all light bulbs.

Clean and Dry the System

If flood water covered your first floor, electrical outlets and switches are probably wet. They should be replaced before service can be restored.

1) Remove the covers from switches, convenience outlets, and other electrical connections.

2) Pull receptacles, switches, and wires about 2 inches out from their boxes. Discard old switches and receptacles.

3) Clean out mud and dirt with clean water. Allow wires to dry. Replace outlets and switches.

4) Use extreme caution in cleaning mud and dirt from the main entrance box. Since the power line enters here, this is the most hazardous part of the electrical system to work on. Assume the power line is hot even if a test light shows power is off. Power to a “dead” line may be restored at any time by repair crews. Never hose out a hot switchbox. Wear rubber gloves and rubber soled shoes. Do not touch anything wet or stand in water while working on the box.

   In an emergency, pull the electrical meter from its base to disconnect the power. Notify the electric company that you broke the seal.

5) Allow electrical wires and connectors to dry completely. This may take days depending on how wet the system is and if any heat is available. For systems with circuit breakers, it is best to replace the breakers if they have been flooded.

Caution: wear rubber gloves and rubber soled boots for all work with electrical circuits. Rubber is an insulator, and will help protect you from shocks.

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Check the System for Electrical Shorts

1) While standing on a dry board or ladder, and wearing rubber gloves and rubber soled shoes, check the main switch box to be sure all fuses or breakers are removed.

2) Close the main switch and look for sparks or smoking wires. These indicate shorted switch connections. If you see evidence of such shorts, carefully try to correct the problem. You may need a new switch.

3) If the switch is in working order, open the switch and insert a fuse or breaker in *one* branch circuit.

4) Close the switch to check for shorts in that branch circuit.

5) If the fuse doesn't trip immediately, wait at least 15 minutes to check for slower electrical leaks. Smoking wires and sparks in the circuit also indicate trouble, and you should carefully inspect all parts of the branch circuit you are checking. If there are any signs of smoking or heating, if the fuse blows, or circuit breaker trips, remove all fuses and open the main switch. You may need to do additional cleaning or drying, or you may possibly have to replace circuit parts.

6) Repeat steps 2 to 5 for each of the other circuits, *one at a time.*

7) After you have checked all the circuits and found them in good condition, once again remove all fuses and open the main switch. Reinsert wires for electrical receptacles, switches, and light fixtures in junction boxes. Replace covers. Then check each branch circuit again, one at a time, by replacing one fuse at a time and closing the main switch.

8) If everything is OK, close the main switch.

9) For 24 hours, be careful when using receptacles and switches. There may be slow leaks which could cause shocks. Do not plug in electrical appliances that have been flooded until they have been reconditioned.

10) If some circuits are faulty, use only the undamaged circuits. Do not overload undamaged circuits with too many lights or appliances until normal capacity is restored.

Some newer homes may have a ground fault circuit interruption system with their circuit breaker. This will probably need to be replaced.

Push wires, switches, and receptacles back into the junction boxes.

Source: Disaster Handbook for Extension Agents, Cooperative Extension, Penn State University; USDA; Defense Civil Preparedness Agency.

Compiled and Reviewed by Joseph T. Ponessa, Ph.D. - Extension Specialist, Housing and Energy

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