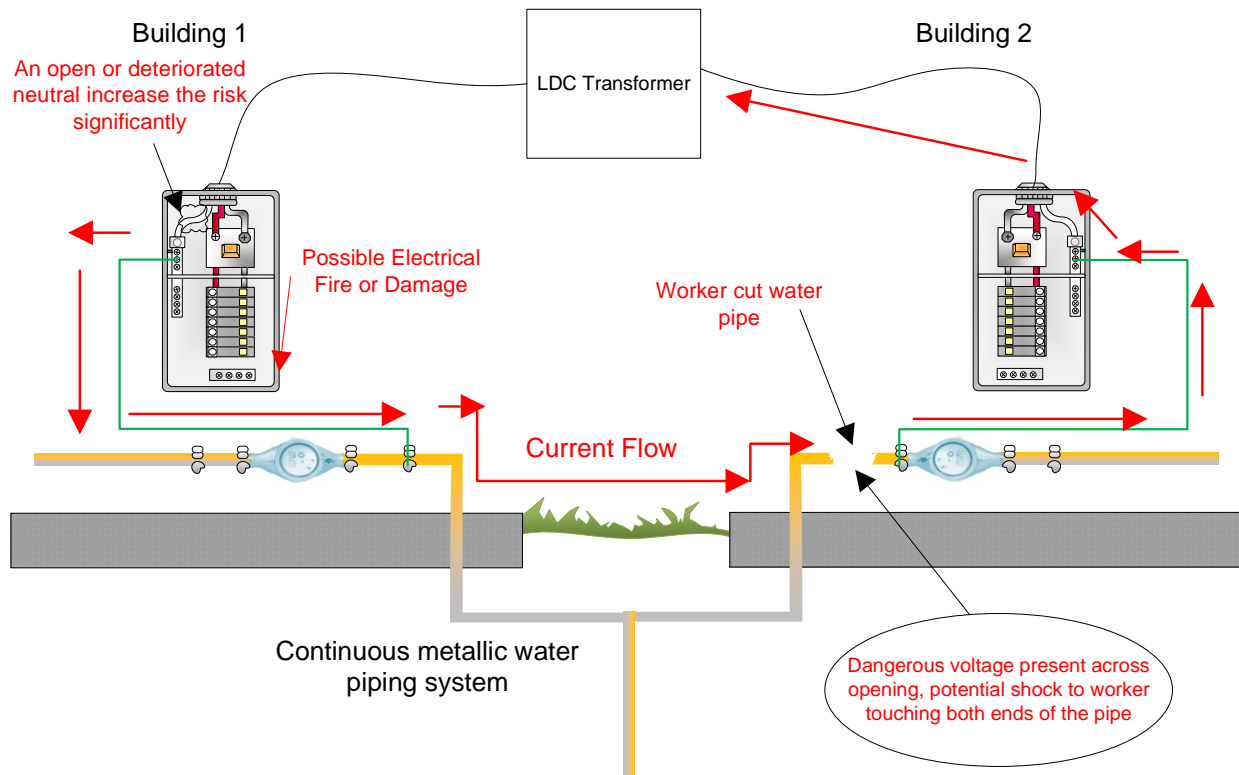


Potential electrical hazards associated with the replacement of metallic water meters or water supply lines

Caution:

Workers who undertake the replacement of a metallic water meter or metallic water piping system should be aware of a possibility of electrical shock or arcing occurring when the continuity of the water piping is interrupted. **Always assume there may be flow of electricity in the piping system and deal with the metallic water pipes as if they are energized.** A latent fault of a disconnected or deteriorated neutral connection in the electrical system will increase the risk significantly, and removing a water meter or cutting the metallic piping system within or exterior to a building may cause an electric shock to the worker.

Diagram F1 - a cut in metallic water pipe may result in dangerous voltage across the opening



Extreme care must be taken when replacing metallic water meters or cutting domestic metallic water supply lines within or exterior to buildings.

Recommendation:

ESA recommends contacting a Licensed Electrical Contractor (LEC) to assess the condition of the existing electrical system including the neutral and grounding electrode connections. In some cases, arcing may be indicative of a more serious problem with the electrical system which requires investigation by an LEC. The Local Distribution Company should be notified if the LEC has determined the arcing is from external sources.

1. Replacement of metallic water meters or repair of metallic piping systems
An LEC may not be able to detect latent conditions in other premises or within the LDC's infrastructure. For this reason, it is imperative that the continuity of the piping system be kept intact when cutting or replacing a domestic water meter is carried out. The installation of a temporary jumper (minimum No. 6 AWG copper wire) with clamps made for the application across the water meter or between broken sections of metallic pipe would be adequate to ensure the continuity of the grounding electrode is maintained with this type of work.
2. Replacement of continuous metallic supply line with non-conductive water supply line
When replacing the metallic water supply line to non-conductive water supply line, a new ground electrode is required to be installed by an LEC prior to the existing piping/grounding electrode being removed. **Connection to a grounding electrode is considered electrical work. A notification shall be filed with ESA.**