Question #182

A device called Thomson's coil, photographed at the left below, consists of a large coil to which the 110V, 60 Hz line voltage is connected (Gwen is pushing the switch with her left hand.). The coil has an iron core made of a large number of iron wires (the black cylinder sticking up out of the coil) to reduce eddy currents in the core. The bright light in the photograph is attached to a smaller secondary coil mounted directly above the primary coil.

Gwen is holding a beaker in which a small coil with a light attached to it has been placed, as seen in the photograph at the right. The changing magnetic field, exiting the magnetic core of the Thomson coil and passing through the small coil, induces an electrical potential in the coil that lights the lamp. The question this week regards what will happen to the light when water is poured into the beaker, covering the coil and the light bulb.

After the coil and lamp are covered with water:

- (a) the light will be brighter.
- (b) the light will be less bright.
- (c) the light will remain about the same brightness.

Click here for Answer #182 after April 5, 2004.

Question of the Week

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